

A cognitive emotional analysis of support workers' reaction to challenging behaviour
in adults with learning disabilities.

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ABSTRACT

Title

A cognitive emotional analysis of support workers' reactions to challenging behaviour in adults with learning disabilities.

Background

Previous research has explored the applicability of Weiner's (1986) attributional model of helping behaviour to support workers of people with learning disabilities regarding challenging behaviour using optimism as a measure of the expectancy of success. No research has investigated the applicability of Weiner's (1993) attributional model of helping behaviour to this group which gives a role to attributions of responsibility. Other research has found that self efficacy affects emotional response to challenging behaviour. The aim of the current research was to examine the relative applicability of these two theories to support workers regarding challenging behaviour using self efficacy as a measure of the expectancy of success.

Method

A total of 88 support workers completed measures addressing causal attributional dimensions, emotional reactions, attribution of responsibility, self efficacy and

willingness to help in response to each of three vignettes regarding the challenging behaviours of aggression, self injury and destruction of property. Data was analysed using Spearman's r correlations.

Results

None of the hypothesised significant correlations were found between measures of causal attributional dimensions and measures of responsibility or self efficacy. Attributing responsibility for the development of a challenging behaviour to the person engaging in it was significantly positively correlated with negative emotion. Self efficacy was significantly negatively correlated with negative emotion and significantly positively correlated with willingness to help. Emotional reaction was not significantly correlated with willingness to help.

Conclusions

The results provided little support for Weiner's (1993) attributional theory of helping behaviour but provided more support for the expectancy of success aspect of Weiner's (1986) theory and indicated that self efficacy is a useful measure of the expectancy of success. No firm conclusion could be drawn as to whether the failure to find significant correlations between causal attributions and other aspects of the theories was a genuine finding or due to the modified use of the Challenging

Behaviour Attributions scale. It is concluded that a measure specifically designed for measuring causal attributional dimensions in this area is required. It is also concluded that low self efficacy may contribute to the development and maintenance of challenging behaviour via its impact on support workers' intent to help. Efforts should therefore be made to raise support workers' self efficacy by altering the perceived cause of challenging behaviour and highlighting to support workers the role of their level of effort, adherence to support plans and the role of any temporary external factors in the development and maintenance of challenging behaviour.

INTRODUCTION

People with learning disabilities have the same rights as all other members of society. They have the same right to be treated with respect by other members of society, to be free from oppression, to live as full a life as possible and to be supported to do so by society's institutions and services. People with learning disabilities are among the most vulnerable in society and often dependent on its institutions and services to a greater degree than people without learning disabilities. As such not only is the poor treatment of people with learning disabilities unacceptable so also is not striving to provide them with the best services possible.

As one of society's most vulnerable groups people with learning disabilities may be more susceptible to poor treatment and less able to lobby for the services and support which they need compared to other groups in society.

Challenging behaviour engaged in by people with learning disabilities is a particular area that can result in negative consequences for such people in the form of inadequate services, being excluded from society and/or in abusive treatment or neglect by carers. Such unacceptable consequences of challenging behaviour need not always be the case as research has shown that challenging behaviour can be worked with to reduce its frequency, severity and the impact it has on people's lives. As such it is a duty of services working with people with learning disabilities who engage in challenging behaviour to engage in working practices with their clients that effectively reduce the intensity, frequency and impact of challenging behaviour on their clients' lives. It is also the duty of services to support their staff in order to both achieve this aim and to improve/protect the wellbeing of support staff. Part of this is the responsibility to carry out research that will highlight ways for support staff to work more successfully with challenging behaviour and so permit people engaging in it to live fuller, richer, more satisfying lives and engage more completely with society and to improve the wellbeing of support staff. It was for this purpose the current research was carried out.

Challenging behaviour is common in people with learning disabilities and behavioural theories are the most prominent explanatory models. More recently, however, researchers have looked at the role of support staff attributions and

emotional responses to challenging behaviour in an attempt to explain the development and maintenance of challenging behaviour. Weiner's attributional theories (1980, 1986, 1993) predict roles for causal attributions, attributions of responsibility, emotional reaction and the expectancy of success in determining support workers' strength of motivation to help people with learning disabilities who are engaging in challenging behaviour. Research support for this is mixed and not all elements of the model have been tested. The present piece of research aims to examine the roles of these different aspects of Weiner's theories in accounting for support workers' motivation to provide help for people with learning disabilities who engage in challenging behaviour. The introduction begins by outlining the definition and prevalence of learning disabilities and challenging behaviour among this population before turning to explanatory models of challenging behaviour. This is followed by an outline of attribution theory and Weiner's 1980, 1986 and 1993 attributional theories of helping behaviour. The next section of the introduction reviews research examining support workers' emotional reactions to and causal attributions for challenging behaviour before moving on to an examination of means of eliciting and measuring attributions and emotions. The introduction then moves onto a review of research addressing the application of Weiner's theories to carers of people with learning disabilities regarding challenging behaviour before ending with a statement of the broad aims and specific hypotheses of the research.

Definition and Prevalence of Learning Disabilities

Learning disabilities involve impairments across a wide range of people's abilities and functioning that often result in other people being involved to differing degrees in supporting them in their daily lives.

DSM-IV-TR (APA, 2000) defines a learning disability as:

- 'A) Significantly sub average mental functioning shown by an IQ of approximately 70 or below on an individually administered IQ test.
- B) Concurrent deficits or impairments in present adaptive functioning i.e.) the person's effectiveness in meeting the standards expected for his age or her age by his or her cultural group, in at least two of the following areas: communication, self care, home living, social-interpersonal skills, use of community resources, self direction, functional academic skills, work, leisure and finally health and safety.
- C) The onset is before 18 years of age'.

This definition of learning disability is closely reflected in the other classificatory/diagnostic systems of ICD 10 / ICF (WHO, 2001) and AAMR 10 (Luckasson, Borthwick-Duffy, Buntinx, Coulter, Craig, Reeve, Schalock, Snell, Spitalnik, Spreat & Tasse, 2002).

The number of people who have a learning disability is significant despite variation in estimates. A large proportion of these people will be supported in their daily lives by support workers.

In a review of 43 papers Roeleveld, Zielhuis and Gabreels (1997) found the prevalence of learning disabilities to range from 2 to 85 per 1000 of the population. An average prevalence rate was suggested from this review of 34 per 1000 for mild learning disabilities and 3.8 per 1000 for more severe learning disabilities. Subsequent literature has estimated the prevalence of learning disabilities as 7.8 per 1000 (Larson, Lakin, Anderson, Kwak, Lee & Anderson, 2001), 3.58 per 1000 (McGrother, Bhaumik, Thorp, Watson & Taub, 2002), 7.18 per 1000 (Bradley, Thompson & Bryson, 2002), 6.2 per 1000 (Stromme & Valvatne, 1998) and 11.23 per 1000 (Heikura, Taanila, Olsen, Hartikainen, von Wendt & Jaervelin, 2003).

In the UK, two guidance papers have been produced which include estimates of prevalence: in Scotland *The Same as You?* was published in 2000, and in England and Wales *Valuing People* was produced in 2001. *The Same as You* estimates that there are 20 individuals per 1000 with a mild or moderate learning disability, and 3 to 4 people per 1000 with a profound or multiple learning disabilities. *Valuing People* estimates that there are 25 people per 1000 with a mild or moderate learning disability, suggesting that this is a low estimate, and that prevalence could increase by 1% per annum over the years 2001 – 2016 due to increased life expectancy.

Despite the range in prevalence rates, these figures indicate that the occurrence of learning disabilities is significant. Many people with learning disabilities engage in challenging behaviour and given the prevalence of learning disabilities this constitutes a common and widespread problem for this population and the support workers involved in their care.

Definition and Prevalence of Challenging behaviour

A widely used and accepted definition of challenging behaviour suggested by Emerson (1998, p.127) is:

‘Culturally abnormal behaviour of such an intensity, frequency or duration that the physical safety of the person or others is likely to be placed in serious jeopardy, or behaviour which is likely to seriously limit use of, or result in the person being denied access to, ordinary community facilities’.

In a joint report titled ‘Challenging Behaviour: a unified approach’ (2007) the Royal College of Psychiatrists, British Psychological Society and Royal College of Speech and Language Therapists recommended building on that definition and adopting the modified definition of challenging behaviour as:

‘Behaviour can be described as challenging when it is of such an intensity, frequency or duration as to threaten the quality of life and/or the physical safety of the individual or others and is likely to lead to responses that are restrictive, aversive or result in exclusion’ (p. 10).

Challenging behaviour is therefore largely defined by its impact and will therefore vary greatly in how it presents and in its causes resulting in one theoretical approach being unlikely to be relevant to all forms of challenging behaviour. Challenging behaviour is also socially constructed in that they are behaviours which break social rules so that whether a behaviour is understood to be challenging will be based on an interaction between what the person does, the setting in which they do it and how their behaviour is understood/interpreted and given meaning. For example, masturbation may be seen as challenging only if it occurs in certain environmental

contexts or in the presence of certain other people. Challenging behaviour can have a wide variety of personal and social consequences for the person who engages in it and for other people. This may be due to challenging behaviour directly impacting on the health and/or quality of life of the person engaging in it, their carers and/or those living or working in close proximity. The consequences of challenging behaviour may also be indirect via the response to challenging behaviour by other people as it may result in abuse, exclusion, deprivation, inappropriate treatment or systematic neglect. Intervention must therefore not only aim to reduce the frequency, duration and intensity of the challenging behaviour but also reduce or prevent some or all of the other physical and social consequences of it (Emerson, 1998).

Challenging behaviour is not rare among people with a learning disability although prevalence rates reported in published research have varied widely. Murphy, Holland, Fowler and Reep (1985) reported rates ranging from 8% to 15%, while Kiernan and Qureshi (1986) reported a rate of 38%. One recent study found that 10-15% of people with learning disabilities who are in contact with education, social work or social care services engaged in challenging behaviour (Emerson, Kiernan, Alborz, Reeves, Mason, Swarbrick, Mason & Hatton, 2001a), although this does not provide us with an overall population estimate. It can be seen from the above research that challenging behaviour is engaged in by many people with learning disabilities and its consequences can be many and great for both the people engaging in it and for others. As such challenging behaviour constitutes a major area of need for people with learning disabilities as a population and for their carers both paid and

unpaid. Given the importance of this area it has been subject to much research seeking to formulate models that explain the development and maintenance of challenging behaviour.

Models of Challenging behaviour

Emerson (1998) highlighted that a great number of studies have been carried out in an effort to understand the processes underlying challenging behaviour and that most of these have been conducted from either a behavioural or neurobiological perspective. Below is a brief description of the neurobiological, medical and behavioural models of challenging behaviour. However the focus of this study is on the behavioural (i.e. psychological) model and so will be explained in greater depth.

Neurobiological models

Neurobiological models of challenging behaviour have largely examined the role of three types of neurotransmitters in affecting people's behaviour. These are dopamine, serotonin and the opioid peptides, in particular beta endorphin. (Emerson, 1998).

With regard to dopamine the dopaminergic system is involved in the regulation of motor activity and research suggests that problems in one of its subsystems may play a role in the development and maintenance of some kinds of self injurious behaviour

(Schroeder, Hammock, Mulick, Rojahn, Walson, Fernald, Meinhold & Shaphare, 1995).

Serotonin and its system are known to play a role in arousal, responses to aversive stimuli, anxiety, appetite and depression all of which may contribute to the presentation of challenging behaviour. There is also some evidence to suggest that serotonin plays a role in aggression and self injurious behaviour (Bodfish, Crawford, Powell, Parker, Golden & Lewis, 1995; Thompson, Egli, Symons & Delaney, 1994).

Beta endorphin is an opioid peptide neurotransmitter released in response to repeated trauma. Thompson, Symons, Delaney and England (1995) and Sandman and Hetrick (1995) hypothesise that beta endorphin acts as a reinforcer for self injurious behaviour through its analgesic and euphoria inducing ability when it is released into the blood stream in response to self injurious behaviour.

Medical models

Some genetic causes of learning disabilities are associated with challenging behaviour (Clarke, 2003) such as skin picking in Prada-Willi syndrome, self injury in Smith-Magenis syndrome (Colley, Leversha, Voullaire & Rogers, 1990) and impulsivity in Angelman syndrome (Clarke & Marston, 2000). Gunsett, Mulick, Fernald and Martin (1989) suggest that challenging behaviour may sometimes occur in response to pain from an untreated medical problem. Peine, Darvish, Adams,

Blakelock, Jenson and Osborne (1995) suggest challenging behaviour may occur in response to physical illness while Mace and Mauk (1995) suggest a role for mental illness in people engaging in challenging behaviour.

Behavioural models

The most influential behavioural approach has viewed challenging behaviour as an example of operant behaviour where positive and negative reinforcement principles are at work in its development and maintenance. Challenging behaviour is understood as functional and in a limited manner an adaptive way of exercising control over the person's environment. These reinforcers (positive or negative) may be events in the environment such as a personal interaction or escape from a subjectively unpleasant task. However, they may be internal to the person such as masturbation leading to orgasm.

Vital aspects of the behavioural paradigm which are important to understanding challenging behaviour are the concepts of functional relationship, contextual control and dynamic systems of behaviour (Emerson, 1998).

Functional relationship means that reinforcers are defined functionally by what their actual effects on behaviour are rather than making assumptions about whether stimuli will increase or reduce the occurrence of a behaviour. For example, it may seem reasonable to assume that being chastised for undesirable behaviour would be an

unpleasant experience for somebody and so result in the ending or reduced frequency/intensity of the undesired behaviour. However, if the person engaging in the undesired behaviour does not receive as much social interaction as they need then even chastisement may be experienced as positive. Chastisement may then actually serve to increase the frequency of the undesired behaviour.

Contextual control plays an important part in challenging behaviour as it may establish the motivational base which underlies the behaviour. This may translate into personal, biological, historical and environmental setting events establishing the reinforcing or punishing role of otherwise neutral stimuli and thus influencing the motivation of behaviour (Emerson, 1998). Contextual control may provide information or cues to the individual concerning the probability of particular behaviours being reinforced so that certain stimuli become discriminative stimuli which distinguish situations in which reinforcement is more or less likely (Emerson, 1998).

Viewing behaviour as a dynamic system involves viewing most behaviours as under the control of a wide variety of reinforcers with which a person's behaviour will interact. This has a significant implication for the work of clinical psychologists, among others, as it means that intervention can take a wide range of forms. This may be direct work with the individual themselves, work to help staff change their behavioural responses or to change the physical and social environment or the timing of events.

Evidence from research supports the view that behavioural principles can explain much challenging behaviour. Studies have shown that some challenging behaviours are likely to be maintained by reinforcers including attention from carers (Iwata, Dorsey, Silfer, Bauman & Richman, 1982), access to materials and activities (Durand & Crimmins, 1988) and perceptual reinforcers as well as escape from demands (Iwata et al, 1982). Derby, Wacker, Sasso, Steege, Northrup, Cigrand and Asmus (1992) found that challenging behaviour was maintained through gaining or escaping socially mediated reinforcement. This gives the carers, including support workers, of people with learning disabilities a significant role to play in the development, maintenance and resolution of challenging behaviour via their interactions with those they support.

With regard to the maintenance of challenging behaviour carers will often spend most of their time with people who engage in the most extreme challenging behaviour. This increased time will be spent both when the challenging behaviour is being engaged in and when it is not (Duker, Boonekamp, Brummelhuis, Hendrix, Hermans, van Leewe & Seys, 1989; Emerson, Beasley, Offord & Mansell, 1992). Such interactions may be serving to positively reinforce challenging behaviour by providing attention contingent on its occurrence (Hastings, 1995).

With regard to carers playing a role in the development of challenging behaviour it may be that carers shape challenging behaviour by only responding to the more extreme behaviours or by removing a demand only on its occurrence. (Hastings, 1995). It may also be the case that functionally equivalent behaviours to the

challenging behaviour are ignored and therefore not reinforced and so remain relatively infrequent compared to the challenging behaviour (Hastings, 1996). Some research has demonstrated the existence of such interactions. Wilson, Reed and Bartack (1995), Hastings (1996) and Oliver, Hall, Hales and Head (1996) concluded that the immediate staff responses to challenging behaviour in people with learning disabilities are often likely to be positively reinforcing of the clients' challenging behaviour and negatively reinforcing for the staff's behaviour thus perpetuating the problem. Accordingly psychological and intervention models emphasise the importance of staff behaviour in the maintenance of challenging behaviour (Hastings, 1999; Hastings & Brown, 2000) and its development (Hall, Oliver & Murphy, 2001).

The way that carers interact with people with learning disabilities and challenging behaviour is therefore central to the development, maintenance and resolution of challenging behaviour. Those factors which affect staff responses to challenging behaviour are therefore very important. An area that has been the subject of much research is attributional theories of helping behaviour.

Attribution Theory

The term Attribution Theory represents a general theoretical perspective in social and personality psychology which addresses the subject of social perception. The act of attribution is when a person ascribes a characteristic to themselves or another person in order to account for their own or the other person's behaviour. Within an

Attribution Theory approach behaviour is analysed in line with this idea. In short it postulates that a person observes somebody engage in a behaviour and the observer will then make an inference about the observed individual's intentions based on their actions. The observer will then attribute some underlying causal motivating trait or characteristic to that person which is consistent with the behaviour in order to account for the behaviour. People are therefore seen as evaluating the behaviour of others based on perceived motives and intentions. The causes that people attribute to others' behaviour have been found to vary in their position with regard to three dimensions. These dimensions are said to represent the underlying causal structure of people's explanations of behaviour.

Causal structure

People have argued (Heider, 1958) for the existence of an internal/external distinction between the causes of people's behaviour where causes are internal to the person or external to them and located in the environment. This dimension became known as the locus dimension (Weiner, 1985a). Weiner, Frieze, Kukla, Reed, Rest and Rosenbaum (1971) asserted that a second dimension of causality existed and that this reflected a distinction between stable and unstable causes for behaviour. A stable cause of behaviour is one that is unlikely to change in the future and an unstable cause is likely to change in the future. This dimension became known as the stability dimension. A third causal dimension was suggested by Rosenbaum (1972) which distinguished between causes for behaviour that were under the volitional control of

a person and those that were not. This dimension became known as controllability. The existence of these three causal attributional dimensions has been supported by empirical evidence in a variety of areas using various research procedures. Meyer (1980) and Meyer and Koelbl (1982) in a factor analytic study of causal attributions for achievement in exams found evidence for the existence of locus, stability and controllability dimensions. Passer (1977) used multi dimensional scaling to study causal attributions for achievement in exams and found evidence for the existence of locus and controllability dimensions. Passer, Kelly and Michela (1978) used multi dimensional scaling to investigate causal attributions with regard to marital conflict and found evidence of the controllability dimension. Michela, Peplau and Weeks (1982) also used multi dimensional scaling when researching causal attributions for loneliness and found evidence for the existence of the locus and stability dimensions. Stern (1983) used correlations when studying causal attributions for achievement in academic and sporting pursuits and found evidence for the existence of the locus, stability and controllability dimensions.

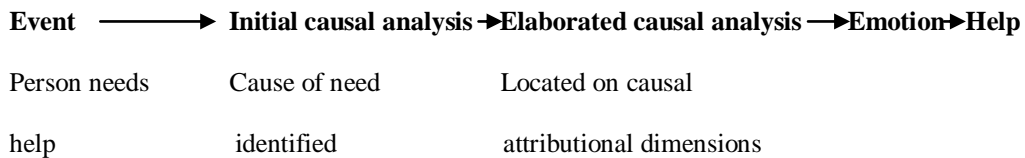
It can therefore be seen that research in a number of areas using various techniques has converged to support the existence of these three underlying causal attributional dimensions. This research has also found that these three casual attributional dimensions of locus, stability and controllability are reliable and generalisable between situations. This causal structure has been used to explain helping behaviour, most notably in Weiner's attributional theories of helping behaviour (1980, 1986, 1993) which have attracted much research in the area addressed by the current research.

*Attribution theory and helping behaviour**Weiner's (1980) theory of helping behaviour.*

Much research in this area has directly or indirectly examined this theory of helping behaviour. This model of helping behaviour postulated that when a person appears to be in need of help then the potential help giver will engage in a causal analysis in an attempt to identify the cause of that person's need. Once the cause of the need is determined in the mind of the potential help giver (whether it is the correct cause or not) it is then consciously or unconsciously examined in terms of its underlying properties regarding the causal attributional dimensions above with the key dimension being controllability. The position of a cause on this causal attributional dimension is thought to determine the emotional reaction of the potential help giver and this emotional reaction then determines the likelihood of help or neglect.

Other mechanisms in determining the likelihood of helping behaviour were also postulated by Weiner (1980) such as witnessing somebody in need of help directly impacting on emotional response and likelihood of help. Weiner (1980), however, found that the evidence suggested that the most influential factors and processes concerned causal attributional processes and this is the nature and emphasis of his theory.

Weiner (1980) was asserting an attribution, emotion, behaviour structure to helping behaviour as shown below:



Weiner's (1980) theory predicted that if the elaborated causal analysis identified that the cause was controllable by the person who needs help then this would likely result in the emotional response of anger which in turn reduces the likelihood of help being offered. Conversely, if the elaborated causal analysis identified that the cause was uncontrollable by the person then this would result in feelings of sympathy which in turn increases the likelihood of help being offered.

Weiner (1980) demonstrated this experimentally and correlationally in a series of six experiments looking at scenarios of a drunk or a disabled individual in need of aid and the lending of class notes to a fellow student. Overall he concluded that a temporal sequence of attribution-emotion-action existed where attributions guide emotions and emotional reactions give drive and direction to behaviour. He also concluded that the attribution dimension structure of locus, stability and controllability with the emphasis on controllability underlay helping behaviour in general and was therefore applicable to many areas of life and many acts of helping.

Weiner's (1993) theory of helping behaviour.

Weiner (1993) suggested a major modification to his 1980 attribution-emotion-action theory of helping behaviour. In this paper he examined the links between causal attributional dimensions, inferences about responsibility, emotional response and action. He asserted that the location of a cause on the attributional dimension of controllability determined the assignment of responsibility which determined emotional response which then determined the likelihood of helping behaviour. The distinction between responsibility and causal controllability is crucial to this theory and can be seen in that:

‘there are circumstances in which a cause is controllable and an act intentional but responsibility is not inferred because of a moral justification (e.g. a student may not put forth effort in school due to the need to look after a sick parent) or because of other mitigating circumstances (e.g. an inability to distinguish right from wrong)’. (Weiner, 1993. p. 959).

Sympathy according to Weiner (1993) is experienced for people who are not seen as responsible for their problems. Based on this Weiner (1993) proposed the following sequence regarding helping behaviour:

attribution (causal controllability) → assign responsibility → emotion → behaviour

Support for this theory comes from research demonstrating that not being held responsible resulted in being more liked, being pitied, not being the target of anger and generating higher ratings of willingness to help (Wiener, 1991). He also asserted

that the distinction between controllability and responsibility is often not made as people are generally not held responsible for uncontrollable problems (Weiner, 1991).

As a means of testing the theory Weiner (1993) asserted that each adjacent step should significantly correlate and that correlations between steps in the above sequence should be lower the more steps there were between them, e.g. there should be a higher correlation between emotion and behaviour than between assignation of responsibility and behaviour.

Weiner's (1986) attributional model of motivation and emotion.

Another theoretical approach that is relevant to this area and has been addressed by many researchers is Weiner's (1986) attributional theory of helping behaviour.

Weiner (1986) proposed an attributional theory of motivation and emotion and highlighted its utility in explaining helping behaviour. He postulated two main mechanisms by which people would be motivated to provide help. These were the expectancy principle and the emotional reaction to seeing somebody in need of help.

With regard to the emotional reaction aspect of the theory the above discussion of Weiner's (1980) theory of helping behaviour addresses this subject. With regard to the expectancy principle aspect Weiner (1985) asserted that the expectancy of

success in attaining a goal is a major determinant of action. His expectancy principle states that:

‘changes in expectancy of success following an outcome are influenced by the perceived stability of the cause of the event’ (Weiner, 1985, p599).

He further stated that this principle had three corollaries:

1. ‘If the outcome is attributed to a stable cause then that outcome will be anticipated with increased expectancy/certainty in the future’
2. ‘If an outcome is ascribed to an unstable cause then the certainty/expectancy of that outcome may be unchanged or the future may be anticipated to be different from the past’.
3. ‘Outcomes ascribed to stable causes will be anticipated to be repeated in the future with a greater degree of certainty than are outcomes ascribed to an unstable cause’, (Weiner, 1985, p599).

As illustrated in Figure 1 this theory postulates that a motivation sequence is started by an event. When this happens it is suggested that the person searches for the cause of this. The search for a cause is affected by causal antecedents about the event including specific information such as personal history and the performance of other people in similar circumstances. Based on this the person will then arrive at a causal ascription i.e. their perception of what the cause is. This cause is then located with regard to the attributional dimensions of stability, controllability and locus. It is then asserted that the causal dimensions affect the emotional response of the person and that these emotional responses in part determine action as described above for Weiner’s 1980 theory. Additionally, the perceived stability of a cause is thought to not only influence emotional reactions but also to influence the expectancy of success. This not only affects emotional reaction but also directly affects the

likelihood of acting e.g. if a cause is thought to be stable then the expectancy of success is reduced and so is the likelihood of acting.

A direct non attributional link between emotional reaction to a person needing help and action was also suggested by Weiner (1986). Most evidence however suggests that the most influential factors and processes were the attributional ones and this is the nature and emphasis of the theory.

With regard to the behaviour of support workers working with people with learning disabilities and challenging behaviour Weiner's (1980, 1986, 1993) theories are theoretically relevant in attempting to explain support worker behaviour. Furthermore, Weiner's (1980, 1986, 1993) theories can highlight a cognitive emotional aspect of the possible behavioural interaction between the behaviour of people with learning disabilities and challenging behaviour and their support workers.

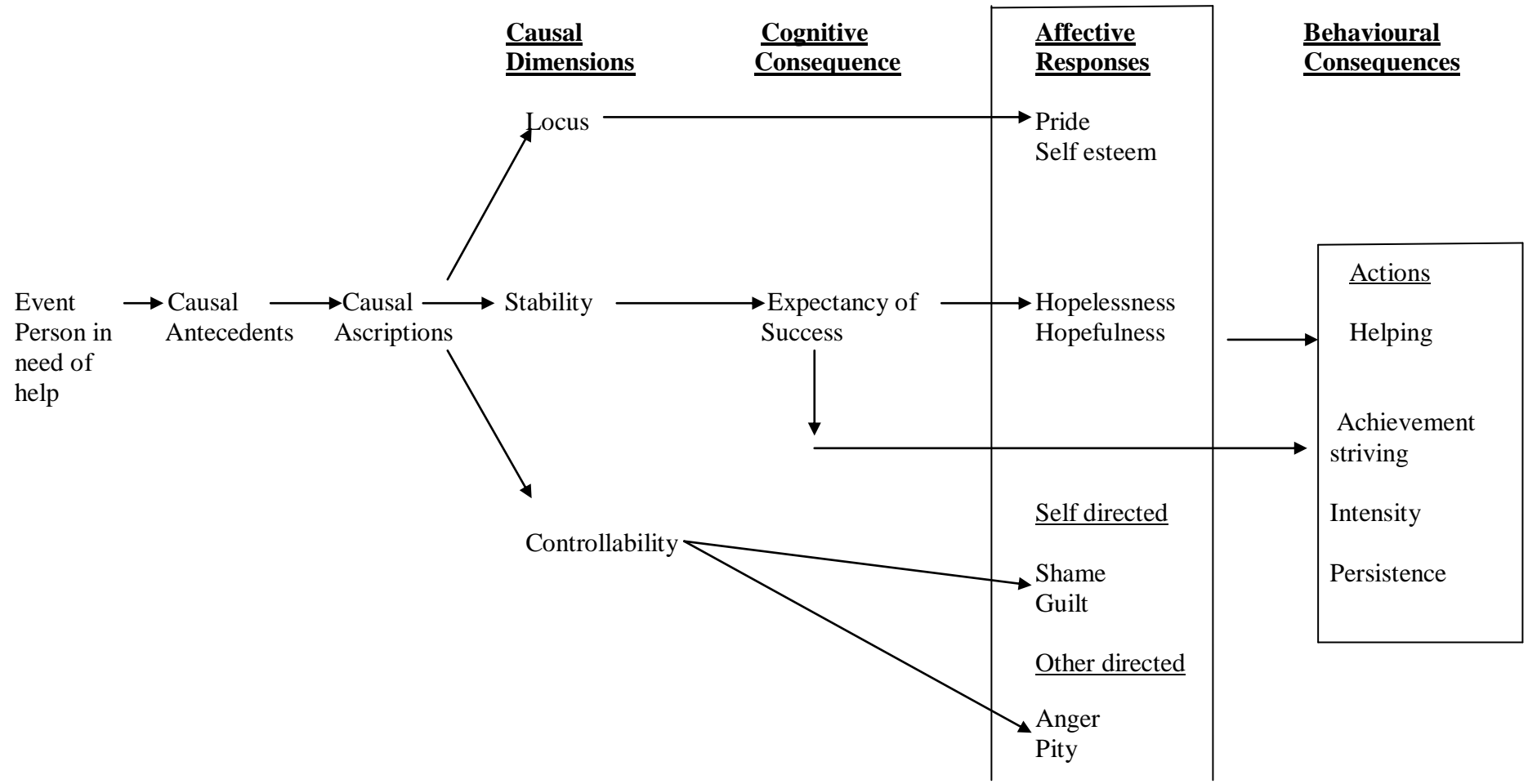
It is unlikely that the above models of helping behaviour can be universally applied to all helping behaviours across all cultures and historical periods. It may be that helping behaviour in terms of the form it takes and/or whether it occurs at all (or even if some other type of behaviour occurs such as active discrimination or oppression) is partly or largely culturally determined. Such cultural determinants may relate to factors operating at the level of society in general and so be different between societies, civilisations or historical periods or perhaps even operate on a smaller level with regard to organisational factors.

However, Weiner's (1980, 1986, 1993) theories of helping behaviour give a central and vital role to support workers' emotional reactions to challenging behaviour and to the attributions of causality they make. In order for Weiner's (1980, 1986, 1993) theories to be relevant to support workers it would require that support workers have emotional reactions to challenging behaviour and make causal attributions regarding it. There is evidence that they do both of these. Also, there is much research suggesting that Weiner's (1980, 1986, 1993) theories are at least partly relevant to support workers for people with learning disabilities.

Carers' Emotional Responses to Challenging Behaviour

Research has found that support workers of people with learning disabilities who engage in challenging behaviours do experience a range of emotional responses to challenging behaviour. Bromley and Emerson (1995) in an interview and questionnaire based study of residential, day centre and peripatetic service support staff asked what proportion of the staff group usually felt anger, annoyance, fear, disgust, despair and sadness in response to challenging behaviour. The authors concluded that not only did support staff experience a range of emotional reactions to challenging behaviours but also that they typically experience a range of emotional responses. That is, support staff experiencing a range of emotional responses to challenging behaviour is the norm. This supports the relevance of Weiner's (1980, 1986, 1993) theories of helping behaviour. Bromley et al. (1995) also concluded that negative emotional reactions in staff to challenging behaviour were one of the factors associated with the provision of inappropriate care.

Figure 1: Weiner's (1986) attributional theory of motivation and emotion.



Beliefs and Attributions about Challenging Behaviour

Research has shown that support workers of people with learning disabilities attribute a range of causes to challenging behaviours and that making such attributions is the norm. Furthermore, it is likely that such attributions vary with regard to the causal attributional dimensions of locus, controllability and stability.

Each of these points indicates the relevance of Weiner's (1980, 1986, 1993) attributional theories of helping behaviour as making causal attributions, their variation and their relation to the causal attributional dimensions are central to and expected by the theories.

Bromley et al. (1995) in a survey based study of residential, day centre and peripatetic service support staff asked open ended questions about what staff thought the causes of challenging behaviours in people with learning disabilities were. Eighty six percent of participants gave an explanatory cause for challenging behaviour with only 14% failing to respond or stating that they did not know why a challenging behaviour was engaged in. This indicates that support workers can and do engage in making causal attributions about challenging behaviour. Bromley et al. (1995) found a wide variety of causal attributions made by staff and were able to categorise them. The categories they identified were internal psychological state/mood, past environment, current environment, self stimulation, communication or an attempt to

manipulate/control, attention seeking, specific medical problem, learning disability or specific syndrome, mental illness, lack of communication skills and escape/avoidance. It can be seen from these that they are likely to vary as to where they could fall on the causal attributional dimensions of locus, controllability and stability discussed above. This indicates the further relevance of Weiner's (1980, 1986, 1993) attributional models of helping behaviour as the causes carers attributed to challenging behaviour would seem to vary with regard to the attributional dimensions central to the theory.

Hastings (1995) also found that support staff attribute a variety of causes to challenging behaviour which could be categorised in several ways including serving a communication function, biological causes, internal emotional states and antecedent environmental factors. Hastings (1995) also found that staff tended to believe the causes of challenging behaviours were beyond their control or influence and were internal to the person engaging in challenging behaviour. It can be seen that the causal attributions identified by Hastings (1995) are also likely to vary with regard to the causal attributional dimensions of locus, controllability and stability.

The above research supports the relevance of Weiner's (1980, 1986, 1993) theories in that the research demonstrates that carers for people with learning disabilities do make causal attributions regarding challenging behaviour. Further support is provided by the fact that doing so is the norm and the causes they identify are likely to vary with regard to the attributional dimensions of locus, controllability and

stability as each of these points are central to and expected by Weiner's (1980, 1986, 1993) theories.

Before going on to discuss the research which has examined Weiner's theories in relation to people with learning disabilities and challenging behaviour the methods of measuring and eliciting causal attributional dimensions and emotional reaction to challenging behaviour will be discussed.

Methods of Eliciting and Measuring Emotional Responses and Causal Attributions Regarding Challenging Behaviour

Measuring Emotional Responses to Challenging Behaviour

It is possible to measure and record people's emotional responses to challenging behaviour and several different ways of doing so have been used in research published in peer reviewed journals.

One measure is The Emotional Responses to Challenging Behaviour scale (ERCB) (Mitchell & Hastings, 1998). This identifies and measures people's emotional responses to challenging behaviour. This scale originally consisted of 15 negative

emotions which people may feel when working with someone who displays challenging behaviour. People are asked to respond on a four point Likert scale from 0 (never) to 3 (very frequently) regarding how often they had felt various emotions in response to challenging behaviour. Two subscales were obtained from factor analysis. The two subscales are depression/anger and fear/anxiety and scores are obtained by summing the scores on the items making up the subscales. Support workers' emotional reactions to challenging behaviour need not always be negative. In 2003 Jones and Hastings modified the Emotional Reactions to Challenging Behaviours scale (Mitchell & Hastings, 1998) by developing a rating scale for positive emotions that carers may experience in response to challenging behaviour following the same design as the negative affect scale. Eight positive emotions were added to the questionnaire. Through factor analysis two factors emerged which were feelings of cheerfulness/excitement and confidence/comfort and the internal consistency for these two subscales was good. The addition of these positive emotions is a strength of the Emotional Reactions to Challenging Behaviours scale as it now more fully reflects the possible emotional reactions of carers to challenging behaviour. Further strengths of this are that the scale addresses a wide range of negative and positive emotions that carers may experience and is based on research as to what emotional reactions to challenging behaviour carers do actually have rather than addressing only those emotions predicted by theory such as sympathy and anger as predicted by Weiner's (1980, 1986, 1993) theories. This means that data gathered using it will better reflect carers' experience and be less likely to exclude data on emotional reactions due to a particular emotion not being included. Jones et

al. (2003) further modified this measure by asking people to respond on a 4 point Likert scale from 0 to 3 regarding the intensity of their experience of each emotion in response to an example of challenging behaviour therefore making it possible to use this measure with vignettes of various types. Further strengths are that the subscales are identified using factor analysis thus making them more objective. The negative emotion subscales also have good internal consistency, test-retest reliability and are relatively unaffected by social desirability (Mitchell et al., 1998).

Other methods of measuring emotional responses to challenging behaviour have usually involved the use of ad hoc Likert scales where carers are asked to rate a number of emotions on a scale addressing frequency or intensity (Dagnan, Trower & Smith, 1998; Rose & Rose, 2005; Wanlass & Jahoda, 2002). Unfortunately these measures are relatively limited in the number of emotions they address and so limit the possible responses of carers. This may result in their emotional responses being excluded from the research or people responding to fit the options they are given and so perhaps biasing results. Also, when using such ad hoc measures there is no information regarding their reliability or the role of social desirability in responses to them.

Other research uses ad hoc Likert measures that address only emotions that are predicted by theory such as sympathy and anger responses predicted by Weiner's (1980, 1986, 1993) attributional theories of helping behaviour (Dagnan & Cairns, 2005; Dagnan & Weston, 2006). While theoretically justifiable such measures

greatly restrict the responses of research participants, may not reflect their experience and so result in lost or misleading data. Such restriction of possible responses is problematic when one considers the range of possible emotional reactions to challenging behaviour experienced by support workers identified in research and the behavioural responses they may give rise to.

Based on the weaknesses stated above of the ad hoc measures of emotional response to challenging behaviour used by several studies in this area and the strengths of the Emotional Responses to Challenging Behaviours scale (Jones et al., 2003) stated above it is likely that the Emotional Responses to Challenging Behaviours scale (Jones et al., 2003) is the superior measure available.

Measuring Attributions

Past research has used several methods to measure carers' attributions about the causes of challenging behaviour.

The Challenging Behaviour Attributions scale (CHABA) Hastings (1997) has been used by Bailey et al., (2006), Grey, McClean and Barnes-Holmes (2002), Hastings et al. (2002) and Hastings, Tombs, Monzani and Boulton (2003). This measure is made up of 33 items with each item stating a possible cause for people with learning disabilities engaging in challenging behaviour. Carers rate each item on a 5 point

Likert scale from -2 =very unlikely to 2=very likely as to how likely it is that a particular service user engaged in a particular challenging behaviour for the reason addressed in each item. It has six subscales: learned positive, learned negative, biomedical, emotional, stimulation and physical environment. Sub scale scores are derived by adding the ratings on all items for each subscale and dividing this value by the number of items pertaining to that subscale. A sub scale score of less than zero suggests that a respondent believes that a particular causal model is unlikely to explain a particular challenging behaviour. A score over zero implies that the respondent thinks that causal explanation explains the target challenging behaviour.

Sub scale scores can also be directly compared in order to gain an understanding of how a respondent conceptualises the cause of a challenging behaviour. Advantages of the Challenging Behaviours Attribution scale (Hastings, 1997) are that it has been designed to specifically address challenging behaviour in people with learning disabilities and so contains possible causes relevant to the types of challenging behaviours often found in the area of learning disabilities. It is also applicable to challenging behaviour in people with learning disabilities in general and does not concern itself with one or a few behaviours. It has also been found to have moderate to good reliability for each of its sub scales as measured by Cronbach's alpha (Hastings, 1997). Unfortunately it does not directly address the attributional dimensions of locus, controllability and stability. However, it can be used to address these, as demonstrated by Bailey et al. (2006) and the means of doing this is described in the Method section of this report.

The Revised Causal Dimension scale (McAuley, Duncan & Russell, 1992) asks participants to state what they thought was the most likely single cause of a behaviour. It then asks people to rate this cause on several nine point Likert scales. This measure has 12 items, three each for the four attributional dimensions of locus, stability, personal controllability and external controllability. Scores for these dimensions are arrived at by summing the responses to the three items which make up the dimension. A strength of this measure is that it was developed to address causal attributional dimensions. However, it limits people to rating just one cause even if people may believe there is or may be more than one cause and so may not reflect the reality of people's experience and may bias the data obtained. It is also not designed specifically for use in the area of challenging behaviour and people with learning disabilities.

The Attributional Style Questionnaire (Peterson, Semmel, Von Baeyer, Abramson, Metalsky & Seligman, 1982) and the expanded Attributional Style Questionnaire (Peterson & Villanova, 1988) involve the person completing it being presented with a number vignettes or being asked to remember an event they were involved in. They are then asked to decide what they think the one major cause of it is. They are then asked to rate this cause in terms of its locus, stability and globality and then rate how important this situation would be if it happened to them. A strength of this is that the questionnaire is specifically designed to measure causal attributional dimensions. Unfortunately its weaknesses are that it limits people to rating just one cause even if people may believe there is or may be more than one cause and so may not reflect the

reality of people's experience and may bias the data obtained. The questionnaire also does not directly address the causal attributional dimension of controllability which is a vital aspect of Weiner's (1980, 1986, 1993) theories.

Ad hoc measures of causal attributional dimensions are also possible where people are asked to rate the controllability, locus and stability of the cause of a behaviour on improvised Likert scales such as those used by Stanley and Standen (2000).

As can be seen from the above there are several ways of measuring attributions each with its strengths and weaknesses. For the current study the Challenging Behaviour Attributions scale (Hastings, 1997) was used due to it being a measure designed to specifically address challenging behaviour in people with learning disabilities. Other strengths are that it contains possible causes relevant to the types of challenging behaviours often found in the area of learning disabilities and is also applicable to challenging behaviour in people with learning disabilities in general and does not concern itself with one or a few. Furthermore, it has been found that the use of the Challenging Behaviours Attribution scale (Hastings, 1997) is modifiable to allow measures of the causal dimensions of locus, stability and controllability to be made and that the results produced when doing so are consistent with much other research (Bailey et al., 2006).

Eliciting Causal Attributions and Emotions in Research

Past research has used several methods to elicit carers' causal attributions about challenging behaviour and their emotional responses to challenging behaviour. Each of these has their strengths and weaknesses.

Within this area of research Dagnan et al. (1998), Stanley et al. (2000) and Hastings (1996) all used written/spoken vignettes describing challenging behaviour. Jones et al. (2003), Hastings, Tombs, Monzani and Boulton (2003) and Noone, Jones and Hastings (2003) used video vignettes of challenging behaviour acted by researchers or actors to elicit causal attributions and emotional responses.

The strengths of vignettes of these types are that they provide a high level of stimulus control so that the researcher can be sure that all participants have been exposed to the same information delivered in the same manner. This is a strength because any variation or patterns in the data collected are more likely to be attributable to the object of study e.g. the attributions people make and the emotional responses arising from these rather than differences in the stimulus. This means that the results can be more readily generalised. Another advantage of both types of vignettes is that when they are presented to participants they are done so in the present and so people may be more likely to respond to them as they would to actual challenging behaviour than they would to the memory of a challenging behaviour. A strength of video vignettes of challenging behaviour over written or spoken ones is that they are closer to real

challenging behaviour in that participants can see and hear it and so may possess more ecological validity. However, despite this they still do not reflect the real experience of carers when experiencing challenging behaviour, have little/no personal significance for them and do not take account of existing relationships and so lose a great deal of ecological validity. However, there is some evidence (Wanless et al., 2002) that causal attributions are consistent between vignettes and real life experiences. Since it is the causal attributions within Weiner's (1980, 1986, 1993) theories that are the starting point for subsequent attributions of responsibility, emotional reaction, expectancy of success and intent to help and vignettes are the means by which to communicate the information to participants on which to base their causal attributions vignettes seem to be a valid means of eliciting data with regard to Weiner's (1980, 1986, 1993) attributional theories of helping behaviour.

Bailey et al. (2006), Dagnan et al. (2006) and Bromley et al. (1995) asked people to recall information from memory about the challenging behaviour of a client with whom they worked and recorded that information in various ways. The strength of eliciting data in this way is that the memories are of a real experience of challenging behaviour and so have a great deal of personal significance for participants, take account of existing relationships and so possess a great deal of ecological validity which may affect the causal attributions they make. However, a weakness of eliciting data in this way is that it provides little stimulus control as variations in the episodes recalled between people are likely to be great. Another weakness regarding asking people to recall an experience of challenging behaviour along with the causal

attributions they made and their emotional reactions at the time is that this information may not be what they thought and felt while experiencing the challenging behaviour. This may especially be so if they have since engaged in discussion with other people and reflected on it themselves.

It can be seen from the above that although written and spoken vignettes have their weaknesses they have several strengths which include the stimulus control they provide and they would be relatively free of the biases of memory. It can also be argued that they are appropriate for use with Weiner's (1980, 1986, 1993) theories.

Research Examining Weiner's Attributional Models of Helping Behaviour in the Area of People with Learning Disabilities and Challenging Behaviour.

With regard to the hypothesised link between causal attributional dimensions and emotional reaction proposed by the 1980 and 1986 theories much research has been conducted providing varying degrees of support for this link. The theory proposes that should such a link exist then this should be reflected in significant correlations between measures of these two. Furthermore, although no direct link between causal attributional dimensions and emotional reaction is proposed by the 1993 theory strong correlations should exist.

Jones et al. (2003) in a study specifically addressing the application of Weiner's (1980) theory to 123 care staff working in community nursing, day centres and residential settings for people with learning disabilities and challenging behaviour found no such correlations. Bailey et al. (2006) in applying Weiner's (1986) theory to 27 care staff for people with learning disabilities working in day centres also found no such correlations.

Both of these pieces of research used a good measure of emotional reaction (the Emotional Reaction to Challenging Behaviour scale) and different measures of causal attributional dimension. Jones et al. (2003) used the Revised Causal Dimension Scale (McAuley et al., 1992) while Bailey et al. (2006) used the Challenging Behaviour Attributions scale (Hastings, 1997). Bailey et al. (2006) used the Emotional Reactions to Challenging Behaviour scale developed by Mitchell et al. (1998) which addresses only negative emotion whereas Jones et al. (2003) used a modified version which also addresses positive emotions. The use of the Emotional Reactions to Challenging Behaviour scale must be considered a strength of these papers as it was specifically designed to identify and measure emotional reactions to challenging behaviour from people with learning disabilities. The measures of causal attributional dimension have both strengths and weaknesses. Although the Challenging Behaviour Attribution scale (Hastings, 1997) was not designed to measure causal attributional dimensions it was specifically designed for use in the area of challenging behaviour among people with learning disabilities and addresses a wide range of possible causes of challenging behaviour. The Revised Causal

Dimension scale (McAuley et al., 1992) while specifically designed to measure causal attributional dimensions limits people to rating one cause and is not specifically designed for use in this area of research.

It may be that no significant correlations were found between causal attributional dimensions and emotional response due to neither measure of causal attributional dimensions being specifically designed for use in this area and therefore not being sensitive enough to strongly identify what dimensions are in use.

It may be however that the use of these two different measures of causal attributional dimension arriving at the same conclusion together with a good measure of emotional response suggests that the finding is genuine. This position is supported by other research in the area which also found no significant correlations between causal attribution dimensions and emotional response (Rose et al., 2005; Sharrock, Day, Qazi & Brewin, 1990). This latter research used the Attributional Style Questionnaire (Peterson et al., 1982) and a variety of measures of emotional response with Sharrock et al. (1990) measuring only sympathy and anger using a Likert scale and Rose et al. (2005) measuring a variety of emotions in the same way.

The failure of Bailey et al. (2006) to find a link between attributional dimension and emotional response may be due to the use of the Challenging Behaviour Attributions scale (Hastings, 1997) to address attributional dimension. This may be because although this scale was developed for addressing causal attributions in the area of

challenging behaviour among people with learning disabilities it is not designed for use in addressing attributional dimensions. This may be the case but the failure to detect such links in other research which uses other measures suggests that this is a genuine finding and that the use of the Challenging Behaviours Attribution scale (Hastings, 1997) as used by Bailey et al. (2006) is valid.

Other research has, however, found a link between attributional causal dimensions and emotional reaction (Dagnan et al., 1998; Dagnan et al., 2006; Hill et al., 2002; Stanley et al., 2000; Wanless et al., 2002) which provides a lack of consensus in this area. Dagnan et al. (1998) applied Weiner's (1986) theory to 20 care staff who worked with people with learning disabilities and found that internal and controllable attributions were significantly positively correlated with negative emotion. Stanley et al. (2000) applied Weiner's (1986) model to 50 care staff working in day services and found that attributions of controllability were significantly positively correlated with negative emotion and significantly negatively correlated with positive emotion. Dagnan et al. (1998) also used the Attributional Style Questionnaire (Peterson et al., 1982) and an ad hoc measure of several emotions whereas Stanley et al. (2000) used ad hoc measures of attributions and emotional reaction. This research suggests that attributional dimensions and emotional reactions are linked. However, the measure of emotional reaction used by Dagnan et al. (1998) and Stanley et al. (2000) provided people with a relatively limited number of emotions to rate which may have biased their responses or missed some data altogether and so may not be a reliable finding. Also the results from studies using the Attributional Style Questionnaire (Peterson et

al., 1982) are ambiguous and conflictual and may suggest that it is not an effective tool for use in this area.

It can be seen that there is a lack of consensus on the hypothesised link between attributional dimensions and emotional response indicating a need for further research. This lack of consensus may be due to the differing degree of appropriateness of the tools used to address it or be due to real variation in the participants' attributions and emotional responses to challenging behaviour. It appears that measures of causal attributional dimensions and emotional reactions specifically developed for use regarding the challenging behaviours of people with learning disabilities are required or failing that a modified measure that more closely addresses this subject. Such a measure regarding emotional reactions does exist and it is the Emotional Reactions to Challenging Behaviour scale (Jones et al., 2003). It has also been seen above that a useful modification of the Challenging Behaviour Attributions scale (Hastings, 1997) is possible and allows attributional causal dimensions to be addressed which produces findings in line with other research.

With regard to the hypothesised link between emotional reaction and intended helping effort proposed by Weiner's (1980, 1986, 1993) theories the results of research in this area are again not conclusive. Jones et al. (2003), Bailey et al. (2006), Sharrock et al. (1990) and Wanless et al. (1992) found no link between the two. The findings of Jones et al. (2003) and Bailey et al. (2006) are especially strong as they both used versions of the Emotional Reactions to Challenging Behaviour scale

described above and a more ecologically valid measure of helping. Bailey et al. (2006) actually observed support workers' helping behaviour and Jones et al. (2003) asked support workers to select from a range of behavioural responses the one they would make in response to a video of a challenging behaviour. Furthermore, other research using different methods also supports their findings. Wanless et al. (2002) in a study applying Weiner's (1986) theory to 38 day centre staff used an ad hoc measure of emotional response and asked people to rate on a Likert scale how much helping effort they would be willing to make and found the opposite of the predicted link.

However, several other studies have found the hypothesised link (Dagnan et al., 2005; Dagnan et al., 1998; Hill et al., 2002; Stanley et al., 2000). Dagnan et al. (1998) found that rating of willingness to help was significantly negatively correlated with negative emotion while Dagnan et al. (2005) in a study of 62 paid carers in residential settings found a significant positive correlation between sympathy and intended helping effort. Stanley et al. (2000) found a significant positive correlation between positive emotion and intended helping. However, these findings may not carry as much weight as the others due to their not using as good a measure of emotional reaction in that they used ad hoc measures and in the case of Stanley et al. (2000) based on theoretical predictions, rather than the Emotional Reactions to Challenging Behaviours scale. Furthermore, these studies did not directly observe helping behaviour.

This convergence of results from studies that used the Emotional Responses to Challenging Behaviour scale and behavioural observations with studies using different measures of emotional reaction and rating scales of help on finding no link between emotional response and helping suggests that these findings are genuine. However, as can be seen there is some evidence that such a link exists and so further study is warranted.

With regard to the role of attributions of responsibility in helping behaviour only one study has been undertaken in this area. Dagnan et al. (2005) applied Weiner's (1993) modified theory to 62 paid carers of people with learning disabilities in residential settings. They examined attributions of internality, controllability and stability with regard to responsibility for the development and resolution of challenging behaviour. They found significant correlations between attributions of controllability and judgements of responsibility for the development and resolution of challenging behaviour. However, there were no significant correlations between judgements of responsibility and emotional response although they were in the direction predicted by the theory. The authors concluded that attributions of controllability play a large part in attributing responsibility and that it was likely that attributions of responsibility play an important part in judgements of sympathy. They also concluded that judgements of the responsibility for the development of a challenging behaviour were likely to result in reduced sympathy whereas judgements of responsibility for the resolution of the challenging behaviour were likely to result in

increased sympathy. A strength of this research is that it addressed responsibility for the development of and resolution of challenging behaviour and so did not confuse/conflate two separate concepts which may have confounded any results. Possible weaknesses are that it used the Attributional Style Questionnaire (Peterson et al., 1982) and so did not use a measure designed specifically for and addressing challenging behaviour in people with learning disabilities. It also asked participants to rate their emotional response to only two emotions (anger and sympathy) predicted by theory and so may have biased the data gathered or missed some data altogether as the emotions to be rated may not have reflected those experienced by the participants. The use of the Emotional Reactions to Challenging Behaviour scale (Jones et al., 2003) may have better reflected people's experience allowing them to communicate this information.

Dagnan et al. (2005) looked only at the role of attributions, emotions and responsibility in helping behaviour and did not address the relative role of the expectancy of success from Weiner's (1986) theory. Given what appears to be strong support for the role of responsibility in this study a valuable piece of research would therefore be to attempt to replicate their results and examine the role of the expectancy of success relative to that of attributions of responsibility.

With regard to research which also addresses the expectancy of success principle research in this area is once again inconclusive about its applicability (Bailey et al., 2006; Dagnan et al., 1998; Sharrock et al., 1990; Stanley et al., 2000; Wanless et al.,

2002). This has examined the role of causal attribution in the expectancy of success and how this in turn affects emotional response and likelihood of offering help. Expectancy of success in this research is usually addressed by measuring optimism about changing a challenging behaviour.

With regard to causal attributions and expectancy of success the existence of such a link has been supported by Sharrock et al. (1990) who found significant negative correlations between optimism and stability and Dagnan et al. (1998) who found a significant negative correlation between stability and optimism. Both studies used the Attributional Style Questionnaire (Peterson et al., 1982) and a measure addressing optimism. However, research by Bailey et al. (2006), Stanley et al. (2000) and Wanless et al. (2002) has failed to find such a link with all of the studies measuring optimism and all but Bailey et al. (2006) using the Attributional Style Questionnaire (Peterson et al., 1982). These conflicting findings may be due to genuine variation among support workers or aspects of the research. This may indicate that the Attributional Style Questionnaire is not a reliable means of addressing this area. Furthermore, it may be that addressing the expectancy of success in terms of optimism may not be the most apt measure when one is asking a support worker to what degree they may personally expect to be successful in working with challenging behaviour. This may not capture the personal nature of such an evaluation and so a more personal measure to themselves may be required such as their self efficacy in dealing with challenging behaviour.

With regard to Wiener's (1986) hypothesised link between expectancy of success and emotional reaction support for this is rather scarce. It is supported by Dagnan et al. (1998) who found a significant negative correlation between optimism and negative emotion. This study used an ad hoc measure of emotional reaction with a more extensive range of emotions to rate than many other research papers and so may have better reflected support workers' actual experience so allowing them to express this and so draw a link with optimism. However, other research has failed to find the expected link between expectancy of success and emotional reaction (Bailey et al., 2006; Sharrock et al., 1990; Stanley et al., 2000; Wanless et al., 2002). The lack of such a finding among these papers may indicate that such a link is not reliable. It may also be due to all of them with the exception of Bailey et al. (2006) using measures of emotional reaction that are limited in the number and type of emotions they address rather than using the Emotional Reactions to Challenging Behaviour scale (Hastings, 1997; Jones et al., 2003). This is supported by the fact that the study that did find a link but did not use the Emotional Reactions to Challenging Behaviours scale (Hastings, 1997; Jones et al., 2003) used more emotions than other research (Dagnan et al., 1998). The finding may also reflect expectancy of success being addressed in a manner carers do not find especially personally relevant or that reflects their own experience of working with challenging behaviour. It would seem then that further research is needed in this area to help resolve the lack of consensus and do so by using the Emotional Reactions to Challenging Behaviour scale (Jones et al., 2003) and a more personal measure of the expectancy of success such as self efficacy.

The proposed link between expectancy of success and intended helping effort is supported by the work of Dagnan et al. (1998) and Sharrock et al. (1990) who both found a significant positive correlation between optimism and helping. However, no link was found by several other researchers as no significant correlations were found (Bailey et al., 2006; Stanley et al., 2000; Wanless et al., 2002). This lack of a finding among the majority of research may be due to the way in which expectancy of success was measured as discussed above and so may warrant the use of a measure that is more personal to the participants. The lack of consensus also suggests the need for further research in this area.

A point that applies to this area of study in general is that the research reviewed above asked staff to respond to various types of challenging behaviour e.g. Wanless et al. (2002) used aggression while Jones et al. (2003) used self injury. Research in this area has also used different numbers of challenging behaviours as stimuli e.g. Dagnan et al. (1998) used one whereas Stanley et al. (2000) used three. It may be that different challenging behaviours are responded to in different ways by support staff and so produces a variety of results in research using different challenging behaviours. In order to combat this and work towards testing the applicability of Weiner's (1986, 1993) theories to challenging behaviour in general it would be useful to carry out research that gathered data on several common challenging behaviours, combined the data and tested the applicability of the theories against this.

As can be seen from the above literature review and the summary table (Table 1) below there is conflicting evidence regarding the accuracy of different aspects of Weiner's (1980, 1986, 1993) theories of helping behaviour. Furthermore, no research has examined the relative roles of attributions of responsibility and the expectancy of success in helping behaviour in this area. Such a research project would add valuable knowledge to this area in terms of attempting to clarify the applicability of these theories to this group.

Emotional Response to Challenging Behaviour and Self Efficacy

There are other factors that affect carers' emotional responses to challenging behaviour, with much research activity being directed at staff experience, knowledge and training. It has been demonstrated that carers with higher levels of behavioural knowledge or who have attended a behavioural training course are more likely to adopt causal beliefs and favour interventions that are behavioural in nature (Berryman, Evans and Kalbag, 1994; Oliver, Hall, Hales and Head, 1996). However, objective measures of a person's knowledge and ability to affect a situation are not necessarily as important as that person's perception of their efficacy to do so (Lazarus and Folkman, 1984). Therefore, in attempting to determine those factors which affect carers' responses to challenging behaviour it is important to examine people's perceived self efficacy with regard to working with challenging behaviour.

Hastings et al. (2002) examined the role of perceived self efficacy among support workers of people with learning disabilities regarding their ability to deal with challenging behaviour and the effect this has on their emotional response to challenging behaviour. They studied 70 staff in state and private schools for children with learning disabilities and/or autism. They found that staff self ratings of self efficacy independently predicted the emotional responses of fear/anxiety and depression/anger. They also found that staff self efficacy ratings were inversely related to negative emotional reactions to challenging behaviour. It was also found that this subjective rating of self efficacy and objective measures of self efficacy (measures of knowledge) had different effects causing the researchers to therefore conclude that they are separate and distinct and should be studied as such.

These findings suggest a role for self efficacy in determining the likelihood of support workers helping people with learning disabilities who engage in challenging behaviour via its affect on emotional reaction to challenging behaviour and expectancy of success. These arguments give a possible role for self efficacy within Weiner's (1986) theory of helping behaviour in that it may occupy the position of a measure of expectancy of success. This gives rise to the interesting possibility that support workers' self efficacy will be affected by their perceptions of the stability of the causes of challenging behaviour. This results in certain predictions about the relation of self efficacy to other variables in that it should be significantly negatively correlated with a stable cause for a challenging behaviour, significantly negatively

correlated with negative emotion and significantly positively correlated with willingness to help.

To date no research has examined the relative roles of expectancy of success using self efficacy as a measure *and* attributions of responsibility in seeking to explain the helping behaviour of support staff of people with learning disabilities who engage in challenging behaviour when applying Weiners (1986, 1993) theories. This research will therefore aim to do this and address the shortcomings of the above research.

Several methodological improvements can be suggested based on the above review of literature. These are addressing a wider range of emotional responses to challenging behaviour using a measure specifically designed to do so and using a measure of attributions that is based on work that has examined challenging behaviour in people with learning disabilities. Other improvements are using a measure of the expectancy of success which may reflect how support workers assess their own personal expectancy of successfully working with challenging behaviour and gathering information in response to a wider range of challenging behaviours. These shortcomings will be addressed by using the Challenging Behaviours Attributions scale (Hastings, 1997) as used by Bailey et al. (2006), the Emotional Reactions to Challenging Behaviours scale (Jones et al., 2003), self efficacy as a measure of the expectancy of success and by gathering data regarding the challenging behaviours of aggression, self harm and destruction of property.

The current research will gather data from participants regarding three different challenging behaviours. These behaviours will be aggression, self harm and destruction of property. The rationale behind this is that Weiner's (1986, 1993) theories are supposed to be applicable to helping behaviour in general. Therefore the theories should be applicable to support workers' reactions to challenging behaviour in general. Data regarding the three challenging behaviours stated above will therefore be gathered and combined in order to test the theories' applicability to challenging behaviour in general. It would not be feasible to collect data regarding all types of challenging behaviour therefore the challenging behaviours of aggression, self harm and destruction of property will be used as research has shown that these are the challenging behaviours support workers are most familiar with (Bromley and Emerson, 1995). Bromley and Emerson (1995) conducted research using structured interviews and questionnaires to gather information from support staff working with people with learning disabilities and challenging behaviour. They found that the most common types of challenging behaviour were aggression which was engaged in by 37% of this population, self injury (37%), disruption/screaming (34%) and destructiveness (31%). Bromley and Emerson (1995) also examined the frequency with which challenging behaviour occurred and found that the most frequent were aggression, self injury and destructiveness. Aggression occurred at least daily among 29% of individuals who engaged in it, 32% for self injury and 10% for destructiveness. Bromley and Emerson (1995) concluded that although disruption/screaming was engaged in by a sizable minority of people it usually occurred in conjunction with aggression and self injury rather than alone. Bromley and Emerson (1995) also concluded that the most severe types of challenging

behaviour were aggression, self injury and destructiveness. It would appear from this research that the types of challenging behaviour engaged in by the largest proportion of people and that occur with the greatest frequency are aggression, self injury and destructiveness. It appears then that these three challenging behaviours are those that support workers experience most and are most familiar with. In order to test the applicability of Weiner's (1986, 1993) theories to challenging behaviour in general it therefore seems reasonable to use these three types of challenging behaviour as they are likely to reflect the types of behaviour most common in the population and that support staff are most familiar with.

Using these three types of challenging behaviour and combining their data is possibly a strength of this research. The rationale behind using these three challenging behaviours and combining the data gathered regarding them is that Weiner's (1986, 1993) theories are supposed to be applicable to helping behaviour in general. Therefore the theories should be applicable to support workers' reactions to challenging behaviour in general. As it is not practicable within this research to collect data for all types of challenging behaviour it may be desirable to collect it for the challenging behaviours support workers are most familiar with and occur most often i.e. aggression, self harm and destructiveness and combine this data in an attempt to have it be representative of challenging behaviour in general. If it was found that Weiner's (1986, 1993) theories were not applicable to this combined data then it may be possible to argue that the theories are not applicable to challenging behaviour in general as they imply. This would constitute a strong criticism of the theories. Other research has used data from only one challenging behaviour e.g. self

harm (Jones et al., 2003). In such instances the results can only be applied to that challenging behaviour and not to challenging behaviour in general as the theories imply they can be. It is this potential shortcoming in other research that combining the data from the three types of challenging behaviour used in the current research hopes to address.

Table 1: Table summarising research addressing Weiner's (1980, 1986, 1993) theories of helping behaviour.

✓ = expected results found.

X = expected results not found.

Theories	Studies	Expected		Findings				
		Causal attribution/ emotion link	Emotion/ behaviour link	Causal attribution/ responsibility link	Responsibility/ emotion link	Causal attribution/ expectancy link	Expectancy/ emotion link	Expectancy/ behaviour link
Weiner (1980).	Jones et al., (2003)	X	X	N/A	N/A	N/A	N/A	N/A
	Hill et al., (2002)	✓	✓	N/A	N/A	N/A	N/A	N/A
	Dagnan et al., (2006)	✓	N/A	N/A	N/A	N/A	N/A	N/A
Weiner (1993).	Dagnan et al., (2005)	X	✓	✓	X	N/A	N/A	N/A
Weiner (1986).	Sharrock et al., (1990)	X	X	N/A	N/A	✓	X	✓
	Dagnan et al., (1998)	✓	✓	N/A	N/A	✓	✓	✓
	Stanley et al., (2000)	✓	✓	N/A	N/A	X	X	X
	Rose et al., (2005)	X	N/A	N/A	N/A	X	X	N/A
	Bailey et al., (2006)	X	X	N/A	N/A	X	X	X
	Wanless et al., (2002)	✓	X	N/A	N/A	X	X	X

HYPOTHESES

1. Controllable and internal attributions will be significantly positively correlated with the attributions of responsibility for the development of challenging behaviour and responsibility for the resolution of challenging behaviour.
2. Negative emotion will be significantly positively correlated with the attribution of responsibility for the development of challenging behaviour and significantly negatively correlated with the attribution of responsibility for the resolution of challenging behaviour.
3. Negative emotion will be significantly negatively correlated with intent to help.
4. Stable attributions will be significantly negatively correlated with self efficacy.
5. Self efficacy will be significantly positively correlated with intent to help.
6. Self efficacy will be significantly negatively correlated with negative emotion.

METHOD

Ethical Approval

Advice on receiving ethical approval was sought from the Lothian Research Ethics Committee. The proposal for the research was reviewed by the Chairman of the committee who decided that the research was not required to be submitted for ethical review and ethical approval was not necessary from their organisation (see appendix 1).

Ethical Considerations

Before starting the research various ethical considerations were identified and means to address them developed. It was thought that support staff may worry that the information they provided would cast them in an unfavourable light and/or may want nobody to know what data they provided. This was addressed by assuring the support workers that all data would remain anonymous and confidential, describing how this would be achieved and actually ensuring that this was achieved. This was achieved by identifying each support worker's data using only a number and informing them that they have the right to withdraw themselves and their data from the research at any time without consequences for themselves. Support staff were also informed that in the write up of the research no individual's data would be identifiable.

Pilot Study

Participants

Nine support staff from a private sector organisation providing support for people with learning disabilities took part in the piloting of the vignettes. All were currently providing daily support for people with learning disabilities of both sexes, various ages and various degrees of severity. Six support staff were female and four were male. Their ages were not recorded and the length of time with which participants had been working with people with learning disabilities varied greatly from weeks to years.

Recruitment

The manager of an accommodation unit of a private sector organisation was approached by telephone, the project briefly described to her, and an appointment made to meet to discuss it in more detail. At this meeting the nature of the research project and the need to pilot the vignettes was discussed and permission sought to recruit staff to the pilot project. The manager agreed to the researcher attempting to recruit staff to the pilot project through a team meeting. At the team meeting the researcher explained to staff the theoretical rationale for the research, the practical applications for the findings from such research, that the research was being carried

out as part of the researcher's thesis for his training as a clinical psychologist and what their participation would involve. The researcher also explained that a report of the research and its findings would be made available to their place of work and a presentation of the findings be made to participants with a question and answer session at the end. It was also explained to staff that they were in no way compelled or even expected to take part in the research. They were informed that they could refuse to take part in the research and there would be no consequences for them. They were also informed that they could refuse to take part in the research at any time they wished including once they had provided data by contacting the researcher and asking that their data be removed from the research. They were also informed that the data they provided would be anonymous and they would not be identified in any write up of the research. They were informed that their data would only be identified by a number and that this number would be linked to their name on a list that would play no part in the research other than to identify and remove the data of anybody wishing to withdraw from the research. At the end of these explanations was a question and answer session where the staff could ask any questions they had. Staff were not asked to commit themselves to the research at that point rather a time and date was agreed for the researcher to attend the staff's place of work and collect data with any staff who wished to participate attending at that time.

At the arranged time the researcher attended the participants' place of work and those staff who were present and wished to participate did so.

Consent

During the piloting the participants were reminded of what the research was about and what they would be doing. Before carrying out the piloting the participants were asked to read and sign a consent form stating their name and that they understood what information was being asked of them. They were also asked to consent to the information provided being used in the thesis of the researcher, being used in presentations and being used in journal articles. They were also asked to indicate that they knew that the research was anonymous and that they could withdraw themselves and/or the information they provided at any time from the research with no consequences for themselves (see appendix 2).

Apparatus

Vignettes

Three vignettes describing incidents of physical aggression, destruction of property and self injury challenging behaviours were written by the researcher. These were then piloted with the participants. (see appendix 3).

Measures

Challenging Behaviours Attributions scale (Hastings, 1997) (see appendix 4).

Emotional Responses to Challenging Behaviours scale (Jones et al., 2003) (see appendix 5).

Likert rating scales regarding self efficacy in dealing with challenging behaviour as used by Hastings et al. (2002) (see appendix 6).

Likert rating scale regarding responsibility for the development of and change in challenging behaviour as used by Dagnan et al. (2005) (see appendix 7).

Likert rating scale of willingness to help as used by Bailey et al. (2006) (see appendix 8).

Details about these measures are given below.

Procedure

During the piloting of the vignettes the actual intended procedure of the data collection phase of the project was followed in order to make the process as valid as possible and test the practical feasibility of the data collection itself. Participants were each given one copy of the measures for each vignette. They were then read the vignettes by the researcher and asked to complete the measures after each vignette was read to them. After this was complete the participants were given a sheet of

paper containing the three vignettes and asked to write any comments regarding each of the vignettes on the paper. They were asked to bear in mind making comments about the vignette's strengths and weaknesses, clarity, any changes they would make, length, amount of information contained, comprehensibility and language. Once this was completed a brief discussion was held regarding the same issues and how the participants found the experience of completing the questionnaires. The researcher took notes.

Results

Through the comments on the vignette sheets and the discussion several strengths and weaknesses of the vignettes were identified.

The strengths were that the vignettes did reflect the experience of the participants in that many stated that they had experienced/were experiencing some or all of the challenging behaviours described in the vignettes. The participants also stated the vignettes described the challenging behaviours they were most familiar with, were easily understood, were not too long, the language used was easily understood and it was clear what challenging behaviour was being addressed in each vignette.

The weaknesses were that the individual in the vignettes was described as having a 'learning disability (mental retardation)' and it was felt that the term 'mental

retardation' was unnecessary and not the term they were used to using. Therefore 'mental retardation' was removed from the future version of the vignettes. The individual in the vignettes was referred to as 'Peter' in each. It was believed by the participants that the sex of the individual being male rather than female or anonymous affected what they thought the causes of the challenging behaviours would be. Future versions of the vignettes therefore did not state or imply the sex of the person. The final weakness was believed to be that the vignettes did not contain enough information for the participants to know for certain what the causes of the challenging behaviours were. However, this criticism was not acted on as it was believed by the researcher that including more information on the cause of the behaviour would bias results in the direction of whatever information he included in the vignettes and that data regarding participants' attributions and explanations of the challenging behaviours would be lost.

It was also found during piloting that the data collection took about 25 minutes and that the whole process of data collection from initial contact with managers to collecting the data itself was practicable and manageable.

Research Project

Participants

Participants were 88 male and female support workers of people with learning disabilities. Sixty four were female and 24 were male. The ages of the participants were not collected. Seventy two participants were employed by local authorities (councils) and 16 were employed by private sector organisations. The length of time with which participants had been working with people with learning disabilities varied greatly from weeks to years. All participants consented to take part in the research.

Recruitment

Participants were recruited in the manner described in the pilot project section.

Consent

Participants consented to take part in the research in the manner described in the pilot project section.

Apparatus

Vignettes

Three vignettes describing incidents of physical aggression, destruction of property and self injury challenging behaviours were used (see appendix 9) which incorporated the improvements stated in the pilot section above.

Measures

The Challenging Behaviours Attributions scale (Hastings, 1997). The Challenging Behaviour Attributions scale (Hastings, 1997) is made up of 33 items with each item stating a possible cause for people with learning disabilities engaging in challenging behaviour. Carers rate each item on a 5 point Likert scale from -2 =very unlikely to 2=very likely as to how likely it is that a particular service user engaged in a particular challenging behaviour for the reason addressed in each item. It has six subscales: learned positive, learned negative, biomedical, emotional, stimulation and physical environment. Sub scale scores are derived by adding the ratings on all items for each subscale and dividing this value by the number of items pertaining to that subscale. A sub scale score of less than zero suggests that a respondent believes that a particular causal model is unlikely to explain a particular challenging behaviour. A score over zero implies that the respondent thinks that

causal explanation explains the target challenging behaviour. Sub scale scores can also be directly compared in order to gain an understanding of how a respondent conceptualises the cause of a challenging behaviour. For example, a more positive score for the learned positive sub scale than for the stimulation sub scale would indicate a perceived greater role for positive reinforcement. The Challenging Behaviours Attributions scale (Hastings, 1997) has also been found to have moderate to good reliability for each of its sub scales as measured by Cronbach's alpha (Hastings, 1997). Support workers completed the measure for each vignette.

Although comprehensive in its coverage of possible causes of challenging behaviour the Challenging Behaviours Attribution scale (Hastings, 1997) does not address the 3 attributional causal dimensions e.g. to what extent the causes are thought to be stable or unstable causes, controllable or uncontrollable causes, internal or external causes. To achieve this each item was rated as being an internal or external cause of challenging behaviour and a controllable or uncontrollable cause of challenging behaviour and a stable or unstable cause of challenging behaviour as previously done by Bailey et al. (2006). This was carried out by the researcher, his supervisor and a support worker for people with learning disabilities. Where the ratings were not unanimous the rating that most raters identified was used. This resulted in one of these aspects of each causal dimension being assigned to each questionnaire item. For example an item may have been rated as a controllable cause (controllability causal dimension), an internal cause (locus causal dimension) and a stable cause

(stability causal dimension). The aspect of each causal dimension ascribed to each item can be seen in appendix 10.

Therefore when rating the likelihood of the possible causes in each of the questionnaire's 33 items as being the explanation for the challenging behaviour in the vignettes the research participants were also indirectly rating to what extent they thought those aspects of the causal dimensions assigned to the item applied to the challenging behaviour.

The numerical values assigned to the questionnaire's range of scores for each item was modified from its original -2 to 2 and became 1 to 5 with 1 = very unlikely and 5 = very likely as this would ease data analysis. In this way the Challenging Behaviour Attributions scale (Hastings, 1997) was used to measure participants' rating of the causal attributional dimensions regarding the challenging behaviours in the vignettes.

The Emotional Responses to Challenging Behaviours scale (Jones et al., 2003).

This measure identifies and measures people's emotional responses to challenging behaviour. This scale consists of twenty three emotions, fifteen negative emotions and eight positive emotions which people may feel when working with someone with a learning disability who displays challenging behaviour. People are asked to respond on a 4 point Likert scale from 0 to 3 regarding the intensity of their experience of each emotion in response to an example of challenging behaviour. The scale has two subscales for negative emotion derived from factor analysis. The two

subscales are depression/anger (ten items) and fear/anxiety (five items) and scores are obtained for them by summing the scores on the items making up the subscales. These subscales also have good internal consistency with a Cronbach's alpha coefficient of .85 for the depression/anger subscale and .82 for the fear anxiety subscale. Test-retest reliability is good for both subscales with intra class correlation coefficients of $r=0.74$ for depression/anger and $r=0.81$ fear/anxiety. Correlations between subscale scores and the social desirability scale indicated a low and non significant trend for ratings to be influenced by social desirability in the direction of reporting fewer negative emotional reactions to challenging behaviour (depression/anger: $r(83) = -.15$, $p = \text{n.s.}$; fear/anxiety: $r(83) = -.18$, $p = \text{n.s.}$). Correlations between the subscales indicate that they measure two different aspects of negative emotional reactions to challenging behaviour ($r(83) = .47$) (Mitchell et al., 1997).

The measure also has two subscales regarding positive emotions derived through factor analysis which are feelings of cheerfulness/excitement and confidence/comfort. Internal consistency for these two subscales was good with Cronbach's alpha coefficient for the cheerfulness/excited subscale being .72 and for the confident/comfortable subscale being .70. The measure is also not significantly subject to socially desirable responding (Jones et al., 2003). Support workers completed the measure for each vignette.

Challenging behaviour self efficacy scale. (Hastings et al., 2002). This is a measure specifically developed to measure support worker self efficacy with regard to working with people with learning disabilities who engage in challenging behaviour. Self efficacy was measured using five self efficacy items addressing feelings of 1) control, 2) confidence, 3) perception that they would have a positive impact on the challenging behaviours, 4) how difficult they find it to work with challenging behaviours and 5) satisfaction in dealing with challenging behaviours. Each item was rated on a seven point Likert scale with higher scores reflecting greater self efficacy. Summing the ratings gives a total score and this is the participants' overall self efficacy measure. Support workers completed the measure for each vignette.

Responsibility measure. Likert scales were used to measure the participants' attribution of responsibility for the development of and responsibility for resolution of challenging behaviours. These were measured using one question for each with each rated on a seven point Likert scale. A low score indicated a lower attribution of responsibility and a high score a higher attribution of responsibility. This measure has previously been used by Dagnan et al. (2005). Support workers completed the measure for each vignette.

Willingness to help measure. Willingness to help was measured using a seven point Likert scale. Low scores indicated lower levels of willingness to help and high

scores indicated higher levels of willingness to help. Such a measure has previously been used by Dagnan et al. (2005) and Wanlass et al. (2002). Support workers completed the measure for each vignette.

Procedure

During the data collection phase of the research those support workers who agreed to take part and attended data collection were reminded of what the research was about and what they would be doing. They were also asked to read and complete consent forms as in the pilot project.

They were then read three vignettes describing the challenging behaviours of aggression, self injury and destructiveness. They were read one vignette at a time and after each they then completed the measures stated above.

Data analysis

Data was entered into and analysed using SPSS version 14.

Data gathered for each of the vignettes was combined in order to provide data regarding the challenging behaviours in general.

The hypotheses were tested using Spearman's rho correlations due to the non-normal distribution of the data.

RESULTS

Data was gathered from 88 people for each of the three challenging behaviour vignettes. This resulted in 264 sets of data. Table 2 below shows means and standard deviations for each of the variables in line with the measure of central tendency used in similar research also using Likert measures (Wanless et al., 2002; Dagnan et al., 1998; Stanley et al., 2000; Jones et al., 2003; Noone et al., 2003; Dagnan and Cairns, 2005). Table 2 also shows the ranges, minimum and maximum scores for each variable.

Table 2: Table showing the mean, standard deviation, range and minimum and maximum scores for each variable.

	ERCB negative emotion	ERCB positive emotion	Responsibility for development	Responsibility for change	Willingness to help	Self efficacy	Internal dimension	External dimension	Controllable dimension	Uncontrollable dimension	Stable dimension	Unstable dimension
Mean	77.96	40.54	10.21	11.01	19.26	71.69	185.51	157.31	130.78	215.35	128.10	214.09
Std. Dev.	12.07	7.58	2.30	2.36	1.7	9.83	16.19	15.59	11.94	19.91	12.90	18.95
Range	58	31	11	10	9	45	83	89	66	107	71	97
Minimum score	50	28	5	6	12	51	140	101	95	145	84	154
Maximum score	108	59	16	16	21	96	223	190	161	252	155	251

The inter rater reliability for determining the causal attributional dimensions for each of the Challenging Behaviour Attribution scale's (Hastings, 1997) items was calculated using percentages as previously done by Bailey et al. (2006). This was found to result in 91% unanimous agreement between the raters being achieved for the internal/external dimension, 85% for the stable/unstable dimension and 76% for the controllable/uncontrollable dimension.

The use of the Kolmogorov-Smirnov test revealed that the data collected were not normally distributed (see appendix 11).

Data for the variables of positive emotion $D(88) = 0.12$, $p < .005$, responsibility for the development of challenging behaviour $D(88) = 0.10$, $p < .05$, responsibility for the resolution of challenging behaviour $D(88) = 0.11$, $p < .05$, helping effort $D(88) = 0.20$, $p < .001$, and attributions of controllability $D(88) = 0.10$, $p < .05$ were all significantly non-normal.

Transformations were carried out on the data in an attempt to transform it into normally distributed data which would allow the use of parametric inferential statistics such as regression analyses and Pearson's r test of correlation. The transformations used were log 10, log e, square roots and reciprocals. Unfortunately these transformations were unsuccessful and the data remained non normally distributed. This prevented the use of parametric tests. Therefore, no regression analysis was carried out and a non-parametric test of correlation, Spearman's r_s , was used to examine the relationships between the variables in the hypotheses. A one

tailed test was used as the hypotheses predict a direction to the hypothesised correlations (see appendix 12).

Hypothesis 1

Controllable and internal attributions will be significantly positively correlated with the attributions of responsibility for the development of challenging behaviour and responsibility for the resolution of challenging behaviour.

This hypothesis was not supported as no significant correlations were found between the controllable or internal causal dimensions and any measure of responsibility.

There was no significant correlation between the controllable causal dimension and responsibility for the development of a challenging behaviour ($r_s = -.061$, $N = 88$, $p > .05$, one tailed).

There was no significant correlation between the controllable causal dimension and responsibility for the resolution of a challenging behaviour ($r_s = -.013$, $N = 88$, $p > .05$, one tailed).

There was no significant correlation between the internal causal dimension and responsibility for the development of a challenging behaviour ($r_s = -.038$, $N = 88$, $p > .05$, one tailed).

There was no significant correlation between the internal causal dimension and responsibility for the resolution of a challenging behaviour ($r_s = .015$, $N = 88$, $p > .05$, one tailed).

Hypothesis 2

Negative emotion will be significantly positively correlated with the attribution of responsibility for the development of challenging behaviour and significantly negatively correlated with the attribution of responsibility for the resolution of challenging behaviour.

This hypothesis was partially supported in that a significant positive correlation was found between responsibility for the development of a challenging behaviour and negative emotion ($r_s = .228$, $N = 88$, $p < .05$, one tailed) but no significant correlation was found between responsibility for the resolution of a challenging behaviour and negative emotion ($r_s = -.005$, $N = 88$, $p > .05$, one tailed).

Hypothesis 3

Negative emotion will be significantly negatively correlated with intended helping effort.

This hypothesis was not supported as no significant correlation was found between negative emotion and intended helping effort ($r_s = -.041$, $N = 88$, $p > .05$, one tailed).

Hypothesis 4

Stable attributions will be significantly negatively correlated with self efficacy.

This hypothesis was not supported as no significant correlation was found between the stable causal dimension and self efficacy ($r_s = .134$, $N = 88$, $p > .05$, one tailed).

Hypothesis 5

Self efficacy will be significantly positively correlated with intended helping effort.

This hypothesis was supported as a significant positive correlation was found between self efficacy and intended helping effort ($r_s = .231$, $N = 88$, $p < .05$, one tailed).

Hypothesis 6

Self efficacy will be significantly negatively correlated with negative emotion.

This hypothesis was supported as a significant negative correlation was found between self efficacy and negative emotion ($r_s = -.200$, $N = 88$, $p < .05$, one tailed).

Given the lack of significant correlations between any causal attributional dimension and measures of responsibility it was not appropriate to test for the mediational role of responsibility between causal attributional dimensions and emotional response. Due to the lack of a significant correlation between causal attributional dimension and self efficacy it was not appropriate to test for the mediational role of self efficacy between causal attributional dimensions and help or between causal attributional dimensions and emotional response. (Barron and Kenny, 1986).

DISCUSSION

Theoretical Implications of the Results

The correlation findings indicate that expectancy of success as measured by self efficacy plays a greater role than attributions of responsibility in the provision of help by support workers to people with learning disabilities engaging in challenging behaviour.

The lack of any significant correlations between the attributional causal dimension of control and responsibility of any type undermines Weiner's (1993) theory as this is a central prediction of the theory. It may be that this is a reliable finding and causal attributions of this type do not in fact play a major role in making attributions of responsibility. It may, however, be that this finding is a peculiarity of the group studied or due to methodological limitations of the study. The results may also be due to the use of the Challenging Behaviour Attributions scale (Hastings, 1997) to measure causal dimensions as this scale had to be adapted to perform the task. This uncertainty about these results together with the contrary findings of Dagnan et al. (2005) indicate that further research is required in this area. However, Weiner's (1993) theory is partially supported by the finding of a significant positive correlation between responsibility for the development of a challenging behaviour with negative emotion which is a prediction that the theory gives rise to. This finding suggests that when support workers view the development of a challenging behaviour as being the responsibility of the person with a learning disability then they blame them for it. Weiner's (1993) theory also states that negative emotional reactions result in a lower motivation to offer help. However no significant negative correlation between intended helping effort and negative emotional response to challenging behaviour was found in this study. This lack of a finding linking emotional reaction to helping may be a reliable finding or be due to an inadequate measure of helping as this may not reflect what people do in reality. The lack of a finding is unlikely to be due to the measure of emotional reaction as it is a very good one. Therefore future research should address itself to observations of support worker helping rather than use proxy measures. It must be concluded that this

research provides only tentative support for the role of attributions of responsibility in providing help for people with learning disabilities engaging in challenging behaviour. Furthermore, this support is for attributions of responsibility for the development of challenging behaviour.

The findings of the present study provide most support for Weiner's (1986) theory of helping behaviour, specifically that aspect dealing with the expectancy of success. However, this support is also rather limited. This theory also postulates that significant negative correlations will be found between negative emotional responses and intended helping effort for which no evidence has been found by this study. This must be considered to undermine the applicability of this aspect of the theory to this group of people. The lack of a finding for a significant negative correlation between the stable attributional causal dimension and self efficacy (contrary to hypothesis 4) undermines support for the application of the expectancy of success aspect of this theory to support workers of people with learning disabilities. This suggests that viewing the cause of a challenging behaviour as unlikely to change (being stable) does not affect support workers' expectancy of success as measured by self efficacy. However, some support for the theory comes from the findings that self efficacy as an indication of expectancy of success is significantly positively correlated with intended helping effort (as predicted by hypothesis 5) and significantly negatively correlated with negative emotion (as predicted by hypothesis 6). However it must be noted at this point that correlations do not prove causality nor indicate what the direction of any possible causality may be. It may be that the lack of findings regarding stability and self efficacy is reliable or due to the use of the Challenging

Behaviour Attributions scale (Hastings, 1997) to measure causal attributional dimensions as its use had to be modified to achieve this. It cannot be determined whether the lack of a finding is reliable or due to the use of this measure as only one other study (Bailey et al., 2006) used the Challenging Behaviour Attribution scale (Hastings, 1997) and none have used self efficacy as a measure of the expectancy of success.

The findings of the current research do not support Weiner's (1993) theory and also do not support the basic attribution, emotion, behaviour structure of the theory as no significant correlations were found between causal attributional dimensions and anything or between emotions and helping. The current research provides some support for the role of attributions of responsibility for a challenging behaviour affecting emotional response but only with regard to attributing responsibility for its development. Most support exist for the role of the expectancy of success (Weiner, 1986) in the form of self efficacy as self efficacy was found to significantly positively correlate with intended helping and significantly negatively correlate with negative emotional reaction.

Clinical Implications

The findings of this research have several clinical implications. Low levels of support workers' expectancy of success as measured by their self efficacy has been found to be associated with low levels of intention to help. This may result in staff

engaging in avoidant behaviour when clients engage in challenging behaviour and so serve to negatively reinforce that challenging behaviour. Low self efficacy may also result in the possibility staff generally avoiding a client who engages in challenging behaviour and so not engage with them in order for them to learn more adaptive/appropriate ways of behaving. Such staff avoidance behaviour may perpetuate any existing challenging behaviour or it may also play a role in shaping a new challenging behaviour. This may be so as certain staff/client interactions which the client finds unpleasant may elicit mild protests from the client with which the support worker feels able to work. Should the client engage in more extreme behaviour in response to the subjectively unpleasant interaction then the support worker may feel that they are not capable of working productively with the client and so withdraw and in doing so possibly negatively reinforce the client's behaviour.

Self efficacy and attributing responsibility for the development of a challenging behaviour to the person with a learning disability were also found to be significantly negatively and positively correlated respectively with negative emotion. Although no link was found in this research between negative emotion and help experiencing negative emotion may have other consequences.

Hastings, Horne and Mitchell (2004) proposed that frequent exposure to challenging behaviour results in an accumulation of negative emotional reaction which in turn results in stress and burnout. This was supported by Mitchell and Hastings (2001) who found that negative emotional reaction was predictive of burnout and Rose (2004) who found negative emotion correlated with burnout. As well as this being an

unpleasant experience for staff and therefore worthy of being addressed stress and burnout have also been found to be associated with intention to leave one's job, actual turnover and absenteeism (Billingsley, 1993; Hatton and Emerson, 1993; Rose, 1995). Each of these has possible consequences for clients due to possible disruption of routines, lowered predictability in their lives, staff not knowing clients very well and so not knowing how to work with them and clients being unfamiliar with new staff. Such lack of consistency and continuity may contribute to the occurrence of challenging behaviour and is unlikely to provide conditions were it can be addressed by staff. Thus, low self efficacy and attributing responsibility for the development of challenging behaviour may contribute to this via negative emotion and burnout.

In light of this it may be useful to focus clinical efforts on raising support staff's self efficacy. One possible way to achieve this is to alter the causal attributions of support workers that may be associated with low levels of self efficacy. Although the current research found no link between stable causal attributions and self efficacy this may be due to the measure of causal attributional dimensions used. Other research, however, has found links between stable causal attributions and their measure of expectancy of success (Dagnan et al., 1998; Sharrock et al., 1990). Furthermore, it has been found in research on achievement change programmes that altering the cause of perceived failure to an unstable cause such as lack of effort raises the expectancy of success and improves motivation (Dweck, 1975; Zoeller, Mahoney & Weiner, 1983). Similar results have been found for altering the perceived cause of an outcome to poor strategy (Anderson, 1983b) or to temporary external barriers

(Wilson and Linville, 1985). It may be possible to achieve this with support workers through formal training courses, case discussions or sharing of formulations where challenging behaviour is explained as being due to a lack of effort on the part of support workers in the form of the treatment program not being adhered to. Other approaches may be explaining the lack of success of support workers in reducing the frequency and intensity of challenging behaviour as being due to the use of a poor strategy in terms of a previous treatment program not being suitable or not adhering to the actual treatment strategy and so unwittingly implementing a poor one. The highlighting of the role of temporary external barriers in the occurrence of challenging behaviour may also be relevant if for example the client attending an inappropriate day placement was relevant.

This possible use of formal training for staff, case discussion and sharing of formulations may also serve to raise support staff's level of knowledge regarding the cause and treatment of challenging behaviour generally and with regard to specific clients. This may have the affect of altering any stable causal attributions for challenging behaviour to unstable causes and so raise their level of expectancy of success as measured by self efficacy. Changes in expectancy of success following such a change in causal attribution has been found (Anderson, 1983b). Support staff could also be made aware of similar cases where success has been achieved and have progress in the behaviour of their currently challenging client fed back to them. This may raise self efficacy as past success is likely to raise the expectancy of success. Such training, case discussion and formulation sharing may also weaken causal

attributions regarding challenging behaviour being controllable by the person engaging in it which may in turn reduce attributions of responsibility.

This research suggests that it may be important for support staff and those working with them when addressing attributions of responsibility for the development of challenging behaviour to identify ‘mitigating circumstances’. These may serve to justify the development of challenging behaviour and so possibly reduce the likelihood of such an attribution and experience of negative emotion. It may be productive for support staff and work with them to emphasise that making such a judgement with people with learning disabilities is complex due to the existence of background factors (Dagnan et al., 2005). Such factors may include receptive and expressive communication skills, need for routine and predictability, previous life events and mental and physical health. It may also be useful to identify that people with learning disabilities who engage in challenging behaviour may often have little or no control over these factors. All of this information could be made known to support staff via formal training on challenging behaviour in general, case discussions or the sharing of formulations.

How the Current Results Relate to Other Research

The finding of a lack of any significant correlations between causal attributional dimensions and any measure of responsibility may reflect the reality of support workers’ reaction to challenging behaviour. However, the findings of the current

study may be due to the use of the Challenging Behaviour Attributions scale (Hastings, 1997). Although this scale was developed for addressing causal attributions in the area of challenging behaviour among people with learning disabilities it is not designed for use in addressing attributional dimensions and so is perhaps not sensitive enough to detect links between attributional dimensions and attributions of responsibility. This possibility is strengthened by the fact that Dagnan et al. (2005) found a link between attributional causal dimensions and attributions of responsibility using the Attributional Style Questionnaire (Peterson et al., 1982). Further support for this possibility is found in that the only other study to use the Challenging Behaviour Attributions scale (Hastings, 1997) in the manner of the current research was Bailey et al. (2006) who failed to find any significant correlations between causal attributional dimensions and emotional response or optimism. However, the failure to detect links between causal attributional dimensions and emotional response and expectancy of success in other research which used other measures together with the very high inter rater agreement for the Challenging Behaviour Attribution scale (Hastings, 1997) dimension ratings in the current study suggests that this may be a genuine finding. It also suggests that no firm conclusions about the validity of using the Challenging Behaviours Attribution scale (Hastings, 1997) in the way used in the current research can be made. The lack of consensus in this area and the possible role of the use of different measures indicates that a measure of causal attributional dimensions specifically developed for use regarding the challenging behaviours of people with learning disabilities is required as is further research.

With regard to the hypothesised link between attributions of responsibility and emotional response the current research partially supports Dagnan et al. (2005) as they found that responsibility for development and resolution of challenging behaviour both predicted positive emotional response. The current research however found a significant positive correlation only between responsibility for the development of a challenging behaviour and negative emotion. The concordance between these two results especially when it is considered that the current study used the Emotional Responses to Challenging Behaviour scale (Jones et al., 2003) and Dagnan et al. (2005) used a measure asking participants to rate their emotional response to only two emotions (anger and sympathy) indicates that this may be a reliable finding. The idea that attributions of responsibility for the development of a challenging behaviour play a role in determining emotional response is supported. The support is strengthened as the current research found a link for negative emotion whereas Dagnan et al. (2005) found one for positive emotion (sympathy) which is what the theory predicts. The present research found no significant correlations regarding responsibility for the resolution of challenging behaviour with emotional response. It may be that due to the superior measure of emotion used in the current research that more weight should be given to its finding than to Dagnan et al. (2005). However as these are only two pieces of research and have used different measures of emotion this area needs further research.

With regard to the failure by the current study to find the hypothesised link between emotional reaction and intended helping effort the results are supported by the results of Jones et al. (2003), Wanless et al. (2002) and Bailey et al. (2006) all of whom

found no link between emotional reaction and helping. The results are especially strong as the current study, Bailey et al. (2006) and Jones et al. (2003) all used versions of the Emotional Reactions to Challenging Behaviour scale and different measures of helping. The current study measured helping with a simple Likert scale measuring willingness to make extra effort, Jones et al. (2003) used staff selections of responses they would make to video examples of challenging behaviour while Bailey et al. (2006) made observations of actual helping behaviour. This convergence of different methods of measuring help together with the common use of the Emotional Reaction to Challenging Behaviour scale on the same result provides strong support for the findings of the current research. Furthermore Bailey et al's. (2006) use of a scale specifically designed for addressing emotional reactions of staff to challenging behaviour in people with learning disabilities and actual observations of behaviour constitutes very strong evidence that such a link is not supported and that the findings of the current research are reliable. Furthermore, other research using different methods also supports the current study in that Wanless et al. (2002) used an ad hoc measure of emotional response and asked people to rate how much helping effort they would be willing to make and found no evidence for the predicted link. However, several other studies have found the hypothesised link (Dagnan et al., 2005; Dagnan et al., 1998; Hill et al., 2002; Stanley et al., 2000). However, these findings may not carry as much weight as the others due to their not using as good a measure of emotional reaction in that they used ad hoc measures. Furthermore, these studies did not directly observe helping behaviour. The weight of evidence seems to be in favour of emotional reaction not affecting helping behaviour.

With regard to the findings of the present research in relation to the role of self efficacy the results are in line with some other research but conflict with others. With regard to the hypothesised link between causal attributional dimensions and expectancy of success predicted by Weiner's (1986) theory the current research's failure to find such a link is supported by Rose et al. (2005), Wanless et al. (2002), Stanley et al. (2000) and Bailey et al. (2006). Other research however did find such a link (Dagnan et al., 1998; Sharrock et al., 1990).

The weight of evidence seems to suggest that there is no reliable link between causal attributional dimensions and expectancy of success. However, the variation in results that addressed expectancy of success in terms of optimism may indicate that this is not the optimum measure of this concept. It may be that measuring the expectancy of success in terms of optimism may not adequately reflect support workers' experience of expectancy of their own success when working with challenging behaviour. This may result in research measuring optimism failing to reliably find the hypothesised link whereas using a measure of self efficacy may address this problem. Perhaps a more personal measure regarding support workers' own self perceived ability (self efficacy) that better reflects their own experience would be more useful. The lack of a link in the current research that did use a measure of self efficacy as a measure of the expectancy of success could be a reliable finding. It may however be due to the use of the Challenging Behaviour Attribution scale (Hastings, 1997) to measure causal attributional dimensions as this measure was not specifically designed to do this and its use had to be modified to do so. This conclusion finds support in that Bailey et al. (2006) used the Challenging Behaviour Attributions scale (Hastings,

1997) in exactly the same way and also found no significant correlations between causal attributional dimensions and emotion or optimism. However, other research that also failed to find these hypothesised links used the Attributional Style Questionnaire (Peterson et al., 1982). This failure to find the hypothesised links using these two different causal attributional measures means that no firm conclusion can be made about the role of the use of the Challenging Behaviour Attributions scale (Hastings, 1997) in bringing about the current results.

Research in this area that measured causal attributional dimensions using the Attributional Style Questionnaire (Peterson et al., 1982) has produced conflicting results with some finding the hypothesised significant correlations between causal attributional dimension and expectancy of success (Dagnan et al., 1998; Sharrock et al., 1990;) and others not (Stanley et al., 2000; Wanless et al. 2002). This lack of consensus may indicate that the Attributional Style Questionnaire (Peterson et al., 1982) is an inadequate tool for this area. The lack of consensus among research findings and the possible inadequacies of the tools used indicates the need to develop appropriate tools and carry out further research.

With regard to Wiener's (1986) hypothesised link between expectancy of success and emotional reaction the current finding that self efficacy is significantly negatively correlated with negative emotional reaction is supported by Dagnan et al. (1998) who found a significant negative correlation between optimism and negative emotion. Other research however has failed to find a link between expectancy of success and emotional reaction (Bailey et al., 2006; Stanley et al., 2000; Wanless et

al., 2002). The lack of consensus regarding this area and the variety of measures used indicates that more research on this is needed to draw firm conclusions. This research should use the Emotional Reaction to Challenging Behaviour scale (Jones et al., 2003) and self efficacy (Hastings et al., 2002) as a measure of the expectancy of success.

With regard to Weiner's (1986) hypothesised link between expectancy of success and help the current finding of a link between self efficacy and intended helping effort is supported by the work of Dagnan et al. (1998) who found a significant positive correlation between optimism and helping. However, no link was found by several other researchers (Bailey et al., 2006; Stanley et al., 2000; Wanless et al., 2002) and the lack of consensus in this area again suggests the need for further research. Such research may usefully involve the use of self efficacy as a measure of the expectancy of success and observations of actual helping behaviour.

It can be seen that support for Weiner's attributional theories of helping behaviour is patchy with a lack of consensus among published research and with some aspects of the theories receiving more support than others. A possible explanation for the lack of support for Weiner's theories is that in their development they addressed themselves to relatively low frequency behaviours such as coming across a drunk person in need of help whereas challenging behaviour occurs relatively frequently. It may be that support staff habituate to challenging behaviour and so the type of attribution, responsibility, emotion, behaviour response predicted by Weiner's theories (1986, 1993) and seen in other walks of life, ceases to be relevant. In a

situation where a person may need help due to being drunk or needing class notes there may be no history of such behaviour that the potential helper is aware of. However, the opposite is likely to be the case for support staff of people with learning disabilities who engage in challenging behaviour. Support staff may have a long history with someone who has engaged in challenging behaviour for much of that time so that attributions of stability and expectancy of success become more important as the support staff attribute stable causes to explain behaviours they have experienced for prolonged periods of time. Furthermore, when deciding to help somebody in a one off situation e.g. helping a drunk person home or lending class notes the potential helper has a choice to do so. For support staff working towards reducing the frequency and intensity of challenging behaviour and promoting other behaviours is their job, it is a task to perform, a goal to achieve. In such a situation one would expect the expectancy of success to play a stronger role in affecting helping behaviour as is seen in the current research. It would therefore be useful to characterise support workers' relationship to challenging behaviour as one of goal achievement where they are working towards the goal of reducing the frequency and intensity of challenging behaviour and promoting other behaviours. Such a characterisation would be in line with the findings of the current research. It is also logically justifiable in terms of viewing support work as being a job where people have goals to achieve such as the reduction of the frequency and intensity of challenging behaviour. Doing so would also involve shifting the emphasis of research on to the expectancy of success principle and the factors affecting this.

Strengths and Weaknesses of the Current Research

The current research had several strengths and weaknesses. A possible weakness of this research is that the participants were taken from a variety of different employers (social work and independent sector) and so may have had different types and degrees of training, knowledge and approach which may have affected the results. While it is good to compare such groups to see if such differences exist and what if any affects they have this was not within the remit of this research. The research also did not address the role of age and gender. However, these are unlikely to be serious weaknesses as the areas the research was interested in addressing e.g. attributional causal dimensions, self efficacy etc are theorised to be at work in all people and any demographic or professional differences only be relevant due to their impact on these variables of interest.

It may be that a possible weakness of the current research is that no further analyses of staff related information were conducted e.g. regarding staff age, gender or experience. However, the rationale behind not conducting such analyses (and not collecting the data to do so) is that Weiner's (1986, 1993) theories postulate that it is the underlying causal structure of locus, stability and controllability, where causes of the need for help fall within these and subsequent steps in the theories that determine the likelihood of offering help. The theories also postulate that this structure and process is universal. This means that the structure and process described above that result in the likelihood of helping applies to all people irrespective of other factors

such as age, gender and experience. Therefore, in examining the applicability of Weiner's (1986, 1993) theories of helping behaviour to support workers the focus of the research should be the role of the causal structure and subsequent steps in the theories. It is therefore not necessary to examine the effects of other factors such as age, gender and experience when examining the theories' applicability to this group of people. It may be that such other factors may have an impact on helping behaviour but this would be through the operation of the causal structure and subsequent steps in the theories described above thus making these the relevant object of study.

A strength of this research was that it used the Emotional Reactions to Challenging Behaviour scale (Jones et al., 2003). The strength of this is that it addresses a wide variety of emotions experienced by people working with people with learning disabilities and challenging behaviour and so will reflect their experience more closely. This will have resulted in more valid data by not limiting responses to those explicitly stated by Weiner's (1986, 1993) theories. The use of the version of the Emotional Reactions to Challenging Behaviour scale (Jones et al., 2003) that includes positive emotions was also a strength as the overall data provided by it was therefore more relevant to Weiner's (1986, 1993) theories which addresses positive emotional responses as well as negative emotional responses.

A possible weakness of the research was the use of the Challenging Behaviour Attribution scale (Hastings, 1997) to measure causal attributional dimensions

although it is not possible to determine conclusively if this is so. It may appear that it was a weakness as none of the hypothesised significant correlations concerning causal attributional dimensions were found. However, despite other research finding these links (Dagnan et al., 2005; Dagnan et al., 1998) much other research which did not use the Challenging Behaviour Attribution scale (Hastings, 1997) did not (Rose et al., 2005; Stanley et al., 2000; Wanless et al., 2002). The modification of the use of the Challenging Behaviour Attributions scale (Hastings, 1997) together with the lack of consensus among research using other measures of causal attributional dimensions means that firm conclusions about the success or otherwise of its use are not possible.

A strength of using this measure was the very high levels of inter rater agreement on which items on the scale were judged to be internal, external, controllable, uncontrollable, stable or unstable causes of challenging behaviour. However, despite the results from its use being in accordance with other research and the high degree of inter rater agreement it may well be the case that some of the research participants may not, if they were given the chance, have rated the items on the causal dimensions as the researchers did. This criticism combined with the data gained from using this measure indicate that there is a need for the development of a tool specifically designed to address attributional causal dimensions regarding the causes of challenging behaviour in people with learning disabilities.

A possible weakness of this current research is the measure of helping used. In line with much other research (Dagnan et al., 1998; Dagnan et al., 2005; Rose et al., 2005; Sharrock et al., 1990; Stanley et al., 2000; Wanless et al., 2002) participants were asked to rate how willing they would be to help the person in each vignette. Unfortunately such a report is not necessarily the same as the amount of actual effort made to help when faced with challenging behaviour. It would therefore be advisable in future research to observe actual helping behaviour. It would also be useful to observe helping and take a measure of intended helping effort to determine how closely they agreed. However, even if reported intent to help did match actual effort made there is no guarantee that such staff behaviour is therapeutic. This is reflected in the findings of Bailey et al. (2006) who found that participants reporting high levels of reported willingness to help did engage in more approach behaviour but this concerned basic care of clients such as the practical task of feeding rather than habilitative interaction. Future research should therefore observe actual staff behaviour and examine its affect on challenging behaviour. However, a strength of measuring help in the manner used in the current research is that by not looking at actual behaviour of staff it was possible to avoid the impact of different organisations' procedural and training factors.

It is arguable that a strength of the current research is that three challenging behaviours were used to elicit information which may have resulted in a wider range and variety of data being collected than would have been done using one challenging behaviour as much other research does. This is particularly important as emotional response and type of attribution vary depending on the topography of challenging

behaviour (Stanley, et al., 2000) and so the current research may have come closer to addressing challenging behaviour in general rather than just one. It would be interesting in future research to examine whether and to what extent Weiner's (1986, 1993) theories apply to different challenging behaviours.

A further strength of the current research is that it measured two aspects of responsibility for challenging behaviour (responsibility for its development and responsibility for its resolution) so that their impact could be separated and examined. This is a strength as not only are these two aspects of responsibility conceptually distinct they have also been found to result in different emotional responses (Dagnan et al., 2005). The importance of addressing the two separately was borne out in the current research in that statistically significant results were found only for responsibility for the development of challenging behaviour, a result that may have been lost or impossible to tease out of a significant result for a more global measure of responsibility.

A possible weakness of the current research is that it used fictional vignettes read aloud by the researcher. Such a method may lack ecological validity as it does not reflect support staffs' actual experience when working with an incidence of challenging behaviour. Such a lack of ecological validity may result in a different response to a vignette than to a real experience of challenging behaviour and therefore different data being provided regarding attributions, emotions, self efficacy and willingness to help. There is some evidence to suggest that this is so as Wanless et al. (2002) found stronger emotional reactions in response to real incidents as

compared to fictional vignettes. However, Wanless et al. (2002) also found that the causal attributions made between real incidents and vignettes were consistent. When this is combined with the fact that it is the causal attributions which are the starting point in Weiner's theories this suggests that vignettes are a valid technique when addressing Weiner's theories. However, Wanless et al. (2002) concluded that it may be that emotionally 'hot' cognitions and therefore reactions to challenging behaviour are interpersonal in nature thus resulting in stronger emotional responses to real instances of challenging behaviour. Vignettes can not provide this interpersonal element and so provide emotionally 'cold' cognitions and therefore weaker emotional responses. This is especially relevant to this study as research has shown that general beliefs, as you would get from vignettes, bear little relation to what people do in reality (Ajzen, 1982). Such behaviour has been found in research finding that staff responses to challenging behaviour sometimes conflict with what they say they would do (Hastings, 1995, 1996). Therefore it may be that the use of vignettes is a weakness of the current research. However, a possible strength of using vignettes is that little contextual information is involved and so they may have accessed broad, possibly generalisable information regarding challenging behaviour.

A possible weakness of this research is that several of the measures used were modified slightly for use in this research and this may have affected their validity. The instructions for use at the start of the Emotional Reactions to Challenging Behaviour scale (Jones et al., 2003) were modified to make them more relevant to the current research. This may have affected the data produced by the measure thus possibly reducing its validity and possibly placing a limit on the extent to which this

data may be compared to data from other research using the same measure. Furthermore, the version of the Emotional Reactions to Challenging Behaviour scale (Jones et al, 2003) used in the current research is itself a modification of the original version of the measure developed by Mitchell and Hastings (1998). The original measure asked respondents to indicate how frequently they had experienced a range of negative emotions in their recent experience in response to challenging behaviour engaged in by people with learning disabilities they worked with. Jones et al's (2003) version asked people to rate the intensity with which they had experienced both positive and negative emotions in response to challenging behaviour, usually experienced just moments earlier in the form of a vignette. This change in the Jones et al. (2003) version may reduce the extent to which data from the two versions of the measure can be compared. It may also reduce the validity of the findings regarding negative emotional responses as this aspect of the measure was developed for the original version.

The instructions for use at the start of the Challenging Behaviours Attributions scale (Hastings, 1997) were also modified in the current research in order to make them more relevant to the research and so prevent any confusion for the participants. The original version asks participants to rate how likely each reason is to be a cause of challenging behaviour in people with learning disabilities in general. The measure was modified to ask participants to rate how likely each reason was to be a cause of the challenging behaviour in the vignettes. The format of the questionnaire was also slightly amended for the sake of ease of administration. This may have reduced the

validity of the data from this measure and limited the extent to which the data can be compared to that of other research using this measure.

With regard to the measure of self efficacy the original measure included instructions for use at the beginning. These also involved asking participants to give information regarding the child/children with autism they cared for. These instructions were omitted from the version used in the current research as it did not concern children or autism. It was also believed that the use of the measure was self explanatory as completing it simply involved answering questions about the vignette which was currently in use. The wording of the questions was also slightly amended in order to make them more relevant to the vignettes. The original version asked generally about participants' actual experience of working with challenging behaviour in children with autism whereas the amended version asked the same questions but regarding how participants would find working with the individual in the vignettes. These alterations may reduce the confidence with which the current findings can be compared to other research using the original measure.

The alterations to the measures described above may have reduced the validity of the data produced by them and may have reduced the extent to which the data can be compared to the data from other research using the same measures. Therefore, the validity of the conclusions drawn in the current research may be limited or reduced by this as are the comparisons made to other research. However, the alterations were small and the findings of the current research are broadly in line with those of much other research. This may indicate that the alterations to the measures had no great

impact and the findings and comparisons with other research are valid if slightly reduced in this by the alterations.

Another factor which has been found to affect staff response to challenging behaviour is workplace culture (Hastings, 1995). This is not addressed in this current research and it would be useful to investigate its nature and role in relation to Weiner's (1986, 1993) theories.

Ethical Implications

It was possible that the research may have brought to light attributions, ratings of self efficacy and/or emotional responses on the part of support staff that may not have operated in the best interests of people with learning disabilities and/or support staff. It was also possible that bad or unethical practice may be revealed by the research. If so then it would have been necessary to act on such information for the benefit of service users and/or support staff. The anonymous nature of the data would have prevented the targeting of individual support workers or even individual organisations. In the case of attributions, ratings of self efficacy and/or emotional responses being revealed that may not operate in the best interests of staff or service users it may have been necessary to organise a feedback session with each organisation who participated in the research where the findings could be communicated and explained and recommendations for training made to specifically address these. In the case of the research revealing bad or unethical practice it may

have been necessary to meet the managers of locations that took part in the research and inform them that such practice may be occurring in their organisation.

CONCLUSION

To conclude there is little support for Weiner's (1993) theory of helping behaviour as there were no significant correlations between causal attribution dimensions and any measure of responsibility for challenging behaviour nor between emotional reaction and intended helping. There was however an expected significant positive correlation between attributing the responsibility for the development of challenging behaviour to the person engaging in it and negative emotional reaction. The lack of support may be due to methodological issues particularly the modified use of the Challenging Behaviour Attributions scale (Hastings, 1997) to measure causal attributional dimensions. The lack of support may also be a reliable finding and explained by the theory not being applicable to this area as it was developed to explain helping in situations that arise relatively infrequently such as helping someone who has fallen rather than relatively frequently occurring situations such as support workers experiencing challenging behaviour. The theory was also not developed to explain behaviour where 'helping' is a person's job and they theoretically have no choice but to help and have certain tasks to perform, plans to implement and goals to work towards. In such a context it would be expected that expectancy of success would play a greater role. Most support in this current research has come for the expectancy

of success aspect of Weiner's (1986) theory of helping behaviour as significant correlations between self efficacy and intended helping and self efficacy and negative emotion were found as predicted by the theory. However support is limited due to the lack of predicted significant correlations between causal attribution dimensions and self efficacy. The lack of significant correlations regarding causal attribution dimensions may be a reliable finding and is in line with other research (Bailey et al., 2006; Jones et al., 2003). It may however be due to the use of the Challenging Behaviour Attribution scale (Hastings et al., 1997) as a measure of causal attributional dimensions. This indicates the need for the development of a measure specifically designed to measure causal attribution dimensions in the area of people with learning disabilities who engage in challenging behaviour.

It is also concluded that low levels of self efficacy may contribute to the development and/or maintenance of challenging behaviour via its affect on intended helping. A further conclusion is that low self efficacy and attributing responsibility for the development of challenging behaviour to the person engaging in it may contribute to burnout among support workers via their affect on negative emotional response to challenging behaviour.

In light of these findings it is concluded that to improve the effectiveness of support workers in working with challenging behaviour in people with learning disabilities efforts should be made to raise their self efficacy and promote positive emotional responses. This may be achieved by altering the perceived cause of the challenging

behaviour via formal training, case discussions or the sharing of psychological formulations that identify unstable causes and mitigating circumstances for the challenging behaviour. It may also be achieved by using the above methods to highlight the role of lack of effort or poor strategy on the part of support workers and the part played by any temporary external factors.

References

- Ajzen, I. (1982). On behaving in accordance with one's attitudes. In: *Consistency in Social Behaviour* (eds M.P. Zanna, E.T. Higgins and C.P. Herman), pp. 3-15. Prentice Hall, Hillsdale, NJ. Cited by Wanless, L. K. and Jahoda, A. (2002). Responses of staff towards people with mild to moderate intellectual disability who behave aggressively: a cognitive emotional analysis. *Journal of Intellectual Disability Research*, 46, 6, 507-516.
- Allen, D. (1999). Mediator analysis: an overview of recent research on carers supporting people with intellectual disability and challenging behaviour. *Journal of Intellectual Disability Research*, 43, 4, 325-339.
- American Psychiatric Association (APA) (2000). *Diagnostic and Statistical Manual of the Mental Disorders (Fourth Edition-Text Revision, DSM-IV-TR)*. Washington, DC: APA.
- Anderson, C.A. (1983b). Motivational and performance deficits in interpersonal settings: The effects of attributional style. *Journal of Personality and Social Psychology*, 45, 1136-1147. Cited by Weiner, B. (1985). An attribution theory of achievement, motivation and emotion. *Psychological Review*, 92, 548-573.

Bailey, B. A., Hare, D. J., Hatton, C. and Limb, K. (2006). The response to challenging behaviour by care staff: emotional responses, attributions of cause and observations of practice. *Journal of Intellectual Disabilities Research*, 50, 3, 199-211.

Berryman, J., Evans, I.M. and Kalbag, A. (1994). The effects of training in nonaversive behaviour management on the attitudes and understanding of direct care staff. *Journal of Behaviour Therapy and Experimental Psychiatry*, 25, 241-250. Cited by Hastings, R. P. and Brown, T. (2002). Behavioural knowledge, causal beliefs and self efficacy as predictors of special educators' emotional reactions to challenging behaviours. *Journal of Intellectual Disability Research*, 46, 2, 144-150.

Billingslet, B.S. (1993). Teacher retention and attrition in special education: a critical review of the literature. *Journal of Special Education*, 27, 137-174. Cited by Rose, D., Horne, S., Rose, J. L. and Hastings, R. P. (2004). Negative emotional reactions to challenging behaviour and staff burnout: two replication studies. *Journal of Applied Research in Intellectual Disabilities*, 17, 219-223.

Bodfish, J. W., Crawford, T. W., Powell, S. B., Parker, D. E., Golden, R. N. and Lewis, M. H. (1995). Compulsions in adults with mental retardation: prevalence, phenomenology and comorbidity with stereotypy and self injury. *American Journal on Mental Retardation*, 100, 183-192. Cited by E. Emerson (1998) in Emerson, E., Hatton, C., Bromley, J. and Caine, A. (1998). *Clinical Psychology and People with Intellectual Disabilities*. John Wiley and Sons Ltd. Chichester.

Bradley, E. A., Thompson, A. and Bryson, S. E. (2002). Mental retardation in teenagers: prevalence data from the Niagra region, Ontario. *Canadian Journal of Psychiatry – Revue Canadienne de Psychiatrie*, 47, 652-659. Cited by Health Needs Assessment Report: People with Learning Disabilities in Scotland (2004). NHS Health Scotland: Glasgow

Brewin, C. R. (1984). Perceived controllability of life events and willingness to prescribe psychotropic drugs. *British Journal of Social Psychology*, 23, 285-287.

Bromley, J. and Emerson, E. (1995). Beliefs and emotional reactions of care staff working with people with challenging behaviour. *Journal of Intellectual Disability Research*, 39, 4, 341-352.

Chavira, V., Lopez, S. R., Blacher, J. and Shapiro, J. (2000). Latina mothers' attributions, emotions and reactions to the problem behaviours of their children with developmental disabilities. *Journal of Child Psychology and Psychiatry*, 41, 245-252.

Clarke, D. J. and Marston, G. (2000). Problem behaviours associated with 15q-Angelman syndrome. *American Journal on Mental Retardation*, 105, 25-31. Cited by Health Needs Assessment Report: People with Learning Disabilities in Scotland (2004). NHS Health Scotland: Glasgow

Clarke, D. (2003). Diagnostic Criteria for Psychiatric Disorders for Use with Adults with Learning Disabilities/Mental Retardation (DC-LD) and psychiatric phenotypes. *Journal of Intellectual Disability Research*, 47, S1, 43-49. by Health Needs Assessment Report: People with Learning Disabilities in Scotland (2004). NHS Health Scotland: Glasgow.

Colley, A. F., Leversha, M. A., Voullaire, L. E. and Rogers, J. G. (1990). Five cases demonstrating the distinctive behavioural features of chromosome deletion 17. *Journal of Paediatrics and Child Health*, 26, 17-21. Cited by Health Needs Assessment Report: People with Learning Disabilities in Scotland (2004). NHS Health Scotland: Glasgow

Cottle, M., Kuipers, L., Murphy, G. and Oakes, P. (1995). Expressed emotion, attributions and coping in staff who have been victims of violent incidents. *Mental Handicap Research*, 8, 168-183.

Dagnan, D., Trower, P. and Smith R. (1998). Care staff responses to people with learning disabilities and challenging behaviour: A cognitive-emotional analysis. *The British Journal of Clinical Psychology*, 37, 1, 59-68.

Dagnan, D. and Cairns, M. (2005). Staff judgements of responsibility for the challenging behaviour of adults with intellectual disabilities. *Journal of Intellectual Disability Research*, 49, 1, 95-101.

Dagnan, D. and Weston, C. (2006). Physical intervention with people with intellectual disabilities: The influence of cognitive and emotional variables. *Journal of Applied Research in Intellectual Disabilities*, 19, 219-222.

Department of Health (2001) *Valuing people: A new strategy for learning disability for the 21st century*. White Paper. Cm 5086. London: The Stationary Office.

Derby, K.M., Wacker, D.P., Sasso, G., Steege, M., Northrup, J., Cigrand, K., and Asmus, J. (1992). Brief functional assessment techniques to evaluate aberrant behaviour in an outpatient setting: a summary of 79 cases. *Journal of Applied Behaviour Analysis*, 25, 713-721. Cited by E. Emerson in Emerson, E., Hatton, C., Bromley, J. and Caine, A. (1998). *Clinical Psychology and People with Intellectual Disabilities*. John Wiley and Sons Ltd. Chichester.

Duker, P.C., Boonekamp, J., Brummelhuis, Y., Hendrix, Y., Hermans, M., van Leeuwe, J., and Seys D. Analysis of ward staff initiatives towards mentally retarded residents: clues for intervention. *Journal of Mental Deficiency Research*, 33, 1, 55-67.

Durand, V.M., and Crimmins, D.B. (1988). Identifying the variables maintaining self-injurious behaviour. *Journal of Autism & Developmental Disorders*, 18, 1, 99-117.

Dweck, C.S. (1975). The role of expectations and attributions in the alleviation of learned helplessness. *Journal of Personality and Social Psychology*, 31, 674-685.

Cited by Weiner, B. (1985). An attribution theory of achievement, motivation and emotion. *Psychological Review*, 92, 548-573.

Emerson, E., Beasley, F., Offerd, G., and Mansell, J. (1992). Specialised housing for people with seriously challenging behaviours. *Journal of Mental Deficiency Research*, 36, 291-307. Cited by E. Emerson in Emerson, E., Hatton, C., Bromley, J. and Caine, A. (1998). *Clinical Psychology and People with Intellectual Disabilities*. John Wiley and Sons Ltd. Chichester.

Emerson, E. (1995). *Challenging Behaviour: Analysis and Intervention in People with Learning Difficulties*. Cambridge University Press, Cambridge.

Emerson, E., Hatton, C., Bromley, J. and Caine, A. (1998). *Clinical Psychology and People with Intellectual Disabilities*. John Wiley and Sons Ltd. Chichester.

Emerson, E., Kiernan, C., Alborz, A., Reeves, D., Mason, H., Swarbrick, R., Mason, L. and Hatton, C. (2001a). The prevalence of challenging behaviours: a total population study. *Research in Developmental Disabilities*, 22, 77-93.

Grey, I. M., McClean, B. and Barnes-Holmes, D. (2002). Staff attributions about the causes of challenging behaviours. Effects of longitudinal training in multi-element behaviour support. *Journal of Learning Disabilities*, 6, 3, 297-312.

Gunsett, R.P., Mulick, J.A., Fernald, W.B., and Martin, J.L. (1989). Indications for medical screening prior to behavioural programming for severely and profoundly mentally retarded clients. *Journal of Autism & Developmental Disorders*, 19, 1, 167-172.

Hall, S., Oliver, C. and Murphy, G. (2001). The early development of self injurious behaviour: An empirical study. *American Journal on Mental Retardation*, 106, 189-199.

Hastings, R. P. (1995). Understanding factors that influence staff responses to challenging behaviours: an exploratory interview study. *Mental Handicap Research*, 8, 296-320.

Hastings, R. P. and Remington, B. (1995). The emotional dimension of working with challenging behaviours. *Clinical Psychology Forum*, 79, 11-16.

Hastings, R. P. (1996). Staff strategies and explanations for challenging behaviour. *Journal of Intellectual Disability Research*, 40, 166-175.

Hastings, R. P. (1997). Measuring staff perceptions of challenging behaviour: the Challenging Behaviour Attributions Scale (CHABA). *Journal of Intellectual Disability Research*, 41, 6, 495-501.

Hastings, R. P. (1999). The dialogue between research and application: A focus on practical issues in behavioural intervention. In J.R. Scotti and L.H. Meyer (Eds). *Behavioural Intervention: Principles, models and practices*. P433-448.

Hastings, R. P. and Brown, T. (2000). Functional assessment and challenging behaviours: Some future directions. *Journal of the Association for Persons with Severe Handicaps*, 25, 229-240.

Hastings, R. P. and Brown, T. (2002). Behavioural knowledge, causal beliefs and self efficacy as predictors of special educators' emotional reactions to challenging behaviours. *Journal of Intellectual Disability Research*, 46, 2, 144-150.

Hastings, R. P., Tombs, A. K. H., Monzani, L. C. and Boulton, H. V. N. (2003). Determinants of negative emotional reactions and causal beliefs about self injurious behaviour: an experimental study. *Journal of Intellectual Disability Research*, 47, 1, 59-67.

Hastings, R.P., Horne, S. And Mitchell, G. (2004). Burnout in direct care staff in intellectual disability services: a factor analytic study of the Maslach Burnout Inventory. *Journal of Intellectual Disability Research*, 48, 268-273. Cited by Rose, D., Horne, S., Rose, J. L. and Hastings, R. P. (2004). Negative emotional reactions to challenging behaviour and staff burnout: two replication studies. *Journal of Applied Research in Intellectual Disabilities*, 17, 219-223.

Hatton, C. and Emerson, E. (1993). Organizational predictors of staff stress, satisfaction and intended turnover in a service for people with multiple disabilities. *Mental Retardation*, 31, 388-395. Cited by Rose, D., Horne, S., Rose, J. L. and Hastings, R. P. (2004). Negative emotional reactions to challenging behaviour and staff burnout: two replication studies. *Journal of Applied Research in Intellectual Disabilities*, 17, 219-223.

Health Needs Assessment Report: People with Learning Disabilities in Scotland (2004). NHS Health Scotland: Glasgow

Heider, F. (1958). *The psychology of interpersonal relations*. New York: Wiley. Cited by Weiner, B. (1985). An attribution theory of achievement, motivation and emotion. *Psychological Review*, 92, 548-573.

Heikura, U., Taanila, A., Olsen, P., Hartikainen, A. L., von Wendt, L. and Jaervelin, M. R. (2003). Temporal changes in incidence and prevalence of intellectual disability between two birth cohorts in Northern Finland. *American Journal on Mental Retardation*, 108, 19-31. Cited by Health Needs Assessment Report: People with Learning Disabilities in Scotland (2004). NHS Health Scotland: Glasgow.

Hill, C. and Dagnan, D. (2002). Helping, attributions, emotions and coping style in response to people with learning disabilities and challenging behaviour. *Journal of Learning Disabilities*, 6, 4, 363-372.

Iwata, B. A., Dorsey, M. F., Silfer, K. J., Bauman, K. E. and Richman, G. S. (1982). Towards a functional analysis of self injury. *Analysis and Intervention in Developmental Disabilities*, 2, 3-20.

Iwata, B. A., Pace, G. M., Dorsey, M. F., Zarcone, J. R., Vollmer, T. R., Smith, R. G., Rodgers, T. A., Lerman, D. C., Shore, B. A., Mazaleski, J. L., Goh, H-L., Cowdery, G. E., Kalsher, M. J., McCosh, K. C. and Willis, K. D. (1994). The functions of self injurious behaviour: an experimental-epidemiological study. *Journal of Applied Behaviour Analysis*, 27, 215-240.

Jones, C. and Hastings, R. P. (2003). Staff reactions to self injurious behaviours in learning disability services: Attributions, emotional responses and helping. *British Journal of Clinical Psychology*, 42, 189-203.

Kiernan, C. and Qureshi, H. (1986). Feasibility Study for a Survey of the Prevalence and Characteristics of Individuals with Mental Handicap and Severe Behaviour Problems. Hester Adrian Research Centre, University of Manchester, Manchester. Cited by Bailey, Hare, Hatton and Limb (2006). The response to challenging behaviour by care staff: emotional responses, attributions of cause and observations of practice. *Journal of Intellectual Disabilities Research*, 50, 3, 199-211.

Larson, S. A., Lakin, K. C., Anderson, L., Kwak, N., Lee, J. H. and Anderson, D. (2001). Prevalence of mental retardation and developmental disabilities: estimates from the 1994/1995 National Health Interview Survey Disability Supplements. *American Journal on Mental Retardation*, 106, 231-252. Cited by Health Needs Assessment Report: People with Learning Disabilities in Scotland (2004). NHS Health Scotland: Glasgow.

Lazarus, R. S. and Folkman, S. (1984). *Stress, Appraisal and Coping*. Springer-Verlag: Berlin. Cited by Hastings, R. P. and Brown, T. (2002). Behavioural knowledge, causal beliefs and self efficacy as predictors of special educators' emotional reactions to challenging behaviours. *Journal of Intellectual Disability Research*, 46, 2, 144-150.

Luckasson, R., Borthwick-Duffy, S., Buntinx, W., Coulter, D., Craig, E., Reeve, A., Schalock, R., Snell, M., Spitalnick, D., Spreat, S. And Tasse, M. (2002). *Mental Retardation: Definition, Classification and Systems of Supports* (10th edn). Washington, DC: American Association on Mental Retardation.

Mace, F.C., and Mauk, J.E. (1995). Bio-behavioural diagnosis and treatment of self injury. *Mental Retardation and Developmental Disability Research Reviews*, 1, 104-110.

McAuley, E., Duncan, T. E. and Russell, D. W. (1992). Measuring causal attributions: The revised Causal Dimension Scale (CDS II). *Personality and Social Psychology Bulletin*, 5, 566-573.

McGrother, C. W., Bhaumik, S., Thorp, C. F., Watson, J. M. and Taub, N. A. (2002). Prevalence, morbidity and service need among South Asian and white adults with intellectual disability in Leicestershire, UK. *Journal of Intellectual Disability Research*, 46, 299-309.

Meyer, J.P. (1980). Causal attributions for success and failure: A multivariate investigation of dimensionality, formation and consequences. *Journal of Personality and Social Psychology*, 38, 704-715. Cited by Weiner, B. (1985). An attribution theory of achievement, motivation and emotion. *Psychological Review*, 92, 548-573.

Meyer, J.P. and Koelbl, S.L.M. (1982). Dimensionality of students' causal attributions for test performance. *Personality and Social Psychology Bulletin*, 8, 31-36. Cited by Weiner, B. (1985). An attribution theory of achievement, motivation and emotion. *Psychological Review*, 92, 548-573.

Michela, J.L., Peplau, L.A., and Weeks, D.G. (1982). Perceived dimensions of attributions for loneliness. *Journal of Personality and Social Psychology*, 43, 929-936. Cited by Weiner, B. (1985). An attribution theory of achievement, motivation and emotion. *Psychological Review*, 92, 548-573.

Mitchell, G. and Hastings, R. P. (1998). Learning disability care staff's emotional reactions to aggressive challenging behaviours: Development of a measurement tool. *The British Journal of Clinical Psychology*, 37, 4, 441-449.

Mitchell, G. And Hastings, R.P. (2001). Coping, burnout and emotion in staff working in community services for people with challenging behaviours. *American Journal on Mental Retardation*, 106, 448-459.

Murphy, G., Holland, A., Fowler, P. and Reep, J. (1985). MIETS: a service option for people with mild mental handicaps and challenging behaviour or psychiatric problems. *Mental Handicap research*, 4, 41-66.

Oliver, C. (1995). Self injurious behaviour in children with learning disabilities: Recent advances in assessment and intervention. *Journal of Child Psychology and Psychiatry*, 36, 909-927.

Noone, S. J., Jones, R. S. P. and Hastings, R. P. (2003). Care staff attributions about challenging behaviours in adults with intellectual disabilities. *Research in Developmental Disabilities*, 27, 109-120.

Oliver, C., Hall, S., Hales, J. and Head, D. (1996). Self injurious behaviour and people with intellectual disabilities: assessing the behavioural knowledge and causal explanations of care staff. *Journal of Applied Research in Intellectual Disabilities* 9, 229-239.

Passer, M.W. (1977). *Perceiving the causes of success and failure revisited: A multidimensional scaling approach*. Unpublished doctoral dissertation. University of California: Los Angeles: Cited by Weiner, B. (1985). An attribution theory of achievement, motivation and emotion. *Psychological Review*, 92, 548-573.

Passer, M.W., Kelley, H.H., and Michela, J.L. (1978). Multidimensional scaling of the causes for negative interpersonal behaviour. *Journal of Personality and Social Psychology*, 36, 951-962. Cited by Weiner, B. (1985). An attribution theory of achievement, motivation and emotion. *Psychological Review*, 92, 548-573.

Peine, H.A., Darvish, R., Adams, K., Blakelock, H., Jenson, W., and Osborne, J.G. (1995). Medical problems, maladaptive behaviours and the developmentally disabled. *Behavioural Interventions*, 10, 119-140. Cited by E. Emerson in Emerson, E., Hatton, C., Bromley, J. and Caine, A. (1998). *Clinical Psychology and People with Intellectual Disabilities*. John Wiley and Sons Ltd. Chichester.

Peterson, C., Semmel, A., Von Baeyer, C., Abramson, L. Y., Metalsky, G. I. and Seligman, E. P. (1982). The Attributional Style Questionnaire. *Cognitive Therapy and Research*, 6, 287-299.

Peterson, C. and Villanova, P.A. (1988). The expanded attributional style questionnaire. *Journal of Abnormal Psychology*, 97, 87-89.

Roeleveld, N., Zielhuis, G. A. and Gabreels, F. (1997). The prevalence of mental retardation: a critical review of recent literature. *Developmental Medicine and Child Neurology*, 39, 125-132. Cited by Health Needs Assessment Report: People with Learning Disabilities in Scotland (2004). NHS Health Scotland: Glasgow.

Rose, J. (1995). Stress and residential care staff: towards an integration of research. *Mental Handicap Research*, 8, 220-236. Cited by Rose, D., Horne, S., Rose, J. L. and Hastings, R. P. (2004). Negative emotional reactions to challenging behaviour and staff burnout: two replication studies. *Journal of Applied Research in Intellectual Disabilities*, 17, 219-223.

Rose, D., Horne, S., Rose, J. L. and Hastings, R. P. (2004). Negative emotional reactions to challenging behaviour and staff burnout: two replication studies. *Journal of Applied Research in Intellectual Disabilities*, 17, 219-223.

Rose, D. and Rose, J. (2005). Staff in services for people with intellectual disabilities: the impact of stress on attributions of challenging behaviour. *Journal of Intellectual Disability Research*, 49, 11, 827-838.

Rosenbaum, R.M. (1972). *A dimensional analysis of the perceived causes of success and failure*. Unpublished doctoral dissertation. University of California: Los Angeles. Cited by Weiner, B. (1985). An attribution theory of achievement, motivation and emotion. *Psychological Review*, 92, 548-573.

Royal College of Psychiatrists, British Psychological Society and Royal College of Speech and Language Therapists (2007). Challenging behaviour: a unified approach. Clinical and service guidelines for supporting people with learning disabilities who are at risk of receiving abusive or restrictive practices.

Sandman, C. A. and Hetrick, W. P. (1995). Opiate mechanisms in self injury. *Mental Retardation and Developmental Disability Research Reviews*, 1, 130-136. Cited by E. Emerson (1998) in Emerson, E., Hatton, C., Bromley, J. and Caine, A. (1998). *Clinical Psychology and People with Intellectual Disabilities*. John Wiley and Sons Ltd. Chichester.

Schroeder, S. R., Hammock, R. G., Mulick, J. A., Rojahn, J., Walson, P., Fernald, W., Meinhold, P. and Shaphare, G. (1995). Clinical trials of D1 and D2 dopamine modulating drugs and self injury in mental retardation and developmental disabilities. *Mental Retardation and Developmental Disability Research Reviews*, 1, 120-129. Cited by E. Emerson (1998) in Emerson, E., Hatton, C., Bromley, J. and Caine, A. (1998). *Clinical Psychology and People with Intellectual Disabilities*. John Wiley and Sons Ltd. Chichester.

Scottish Executive (2000) *The same as you? A Review of Services for People With Learning Disabilities*. The Stationery Office, Edinburgh.

Sharrock, R., Day, A., Qazi, F. and Brewin, C. R. (1990). Explanations by professional care staff, optimism and helping behaviour: an application of attribution theory. *Psychological Medicine*, 20, 849-855.

Stanley, B. and Standen, P. J. (2000). Carers' attributions for challenging behaviour. *British Journal of Clinical Psychology*, 39, 157-168.

Stern, P. (1983). *A multimethod analysis of student perceptions of causal dimensions*. Unpublished doctoral dissertation. University of California: Los Angeles. Cited by Weiner, B. (1985). An attribution theory of achievement, motivation and emotion. *Psychological Review*, 92, 548-573.

Stromme, P. and Valvatne, K. (1998). Mental retardation in Norway: prevalence and sub-classification in a cohort of 30037 children born between 1980 and 1985. *Acta Paediatrica*, 87, 291-296. Cited by Health Needs Assessment Report: People with Learning Disabilities in Scotland (2004). NHS Health Scotland: Glasgow

Taylor and Carr, E. G. (1994). Severe problem behaviours of children with developmental disabilities: reciprocal social influences. In: *Destructive Behaviour in Developmental Disabilities. Diagnosis and Treatment* (eds T. Thompson and D. B. Gray), pp. 274-89. Sage, Thousand Oaks. Cited in Allen, D. (1999). Mediator analysis: an overview of recent research on carers supporting people with intellectual disability and challenging behaviour. *Journal of Intellectual Disability Research*, 43, 4, 325-339.

Thompson, T., Egli, M., Symons, F. and Delaney, D. (1994). Neurobehavioural Mechanisms of drug action in developmental disabilities. In *Destructive Behaviour in Developmental Disabilities: Diagnosis and Treatment* (ed. T. Thompson and D.B. Gray). Sage: Thousand Oaks, CA. Cited by E. Emerson (1998) in Emerson, E., Hatton, C., Bromley, J. and Caine, A. (1998). *Clinical Psychology and People with Intellectual Disabilities*. John Wiley and Sons Ltd. Chichester.

Thompson, T., Symons, F., Delaney, D. and England, C. (1995). Self injurious behaviour as endogenous neurochemical self administration. *Mental Retardation and Developmental Disability Research Reviews*, 1, 137-148. Cited by E. Emerson (1998) in Emerson, E., Hatton, C., Bromley, J. and Caine, A. (1998). *Clinical Psychology and People with Intellectual Disabilities*. John Wiley and Sons Ltd. Chichester.

Wanless, L. K. and Jahoda, A. (2002). Responses of staff towards people with mild to moderate intellectual disability who behave aggressively: a cognitive emotional analysis. *Journal of Intellectual Disability Research*, 46, 6, 507-516.

Weiner, B. (1980). A cognitive (attributional) emotion-action model of motivated behaviour: an analysis of judgements of help giving. *Journal of Personality and Social Psychology*, 39, 186-200.

Weiner, B. (1985a). 'Spontaneous' causal search. *Psychological Bulletin*, 97, 74-84. Cited in Weiner, B. (1985). An attribution theory of achievement, motivation and emotion. *Psychological Review*, 92, 548-573.

Weiner, B. (1985). An attribution theory of achievement, motivation and emotion. *Psychological Review*, 92, 548-573.

Weiner, B. (1986). *An Attributional Theory of Motivation and Emotion*. Springer-Verlag, Berlin.

Weiner, B. (1991). Metaphors in motivation and attribution. *American Psychologist*, 46, 921-930. Cited by Weiner, B. (1993). On sin versus sickness: a theory of perceived responsibility and social motivation. *American Psychologist*, 48, 9, 957-965.

Weiner, B. (1993). On sin versus sickness: a theory of perceived responsibility and social motivation. *American Psychologist*, 48, 9, 957-965.

Weiner, B., Frieze, I.H., Kukla, A., Reed, L., Rest, S. And Rosenbaum, R. M. (1971). *Perceiving the causes of success and failure*. Morristown, NJ: General Learning Press. Cited in Weiner, B. (1985). An attribution theory of achievement, motivation and emotion. *Psychological Review*, 92, 548-573.

Whittington, R. and Wykes, T. (1996). Aversive stimulation by staff and violence by psychiatric patients. *British Journal of Clinical Psychology*, 35, 11-20. Cited by D. Allen (1999). Mediator analysis: an overview of recent research on carers supporting people with intellectual disability and challenging behaviour. *Journal of Intellectual Disability Research*, 43, 4, 325-339.

Wilson, T.D. and Linville, P.W. (1985). Improving the performance of college freshmen with attributional techniques. *Journal of Personality and Social Psychology*, 49, 287-293. Cited by Weiner, B. (1985). An attribution theory of achievement, motivation and emotion. *Psychological Review*, 92, 548-573.

Wilson, C. S., Reed, C. E. and Bartak, L. (1995). Problem behaviour and staff responses in community based homes. *Australia and New Zealand Journal of Developmental Disabilities*, 20, 127-139.

World Health Organisation (2001). *The International Classification of Functioning, Disability and Health (ICF)*. Geneva: WHO.

Zoeller, C., Mahoney, G., and Weiner, B. (1983). Effects of attribution training on the assembly task performance of mentally retarded adults. *American Journal of Mental Deficiency*, 88, 109-112. Cited by Weiner, B. (1985). An attribution theory of achievement, motivation and emotion. *Psychological Review*, 92, 548-573.

Appendix 1

Re: research ethics advice

Thursday, 11 October, 2007 9:36 AM

From:

To:

-----Inline Attachment Follows-----

Dear Andrew

The Chairman of LREC01 has looked at your proposal.

I can confirm that the Chairman feels that this is an evaluation and as such does not required to be submitted for ethical review and ethical approval is not necessary. You should still contact the relevant department with regards Management approval.

Kind regards

Co-ordinator
Lothian Research Ethics Committee 01

>>> andrew williamson
To whom it may concern

I am a trainee clinical psychologist currently on the University of Edinburgh training course. I am about to start my final year in which I need to do a thesis. I have worked up a thesis proposal (see attached) and have received feedback from the course organisation group there that it is a viable project and ready to go in its current form. I have been told by one of my supervisors that there is a chance that I may not need to complete the NRES/COREC form. Could you read my attached thesis proposal and tell me if this is the case. The proposal is in the form of the university's ethics form which is based on the NRES/COREC form.

Thank you for your time in this matter and I look forward to hearing from you soon.

Yours sincerely

Andrew Williamson

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The information contained in this message may be confidential or legally privileged and is intended for the addressee only. If you have received this message in error or there are any problems please notify the originator immediately. The unauthorised use, disclosure, copying or alteration of this message is strictly forbidden.

Appendix 2

Consent Form

Name:

I understand what information is being asked of me
for the research project.

I consent to the information I provide being used
in the thesis of the researcher.

I consent to the information I provide being used
in presentations.

I consent to the information I provide being used
in journal articles.

I understand that the research will be anonymous.

I understand that I can withdraw myself and/or the
information I provide from the research with no
consequences for myself.

Signature:

Appendix 3

Vignette 1

Physical Aggression

Peter is a man who has a learning disability (mental handicap). Sometimes Peter is aggressive towards his carers and the people he lives with. He will punch, kick and scratch people. He will also pull their hair and sometimes push them hard enough that they will fall to the ground.

Vignette 2

Property Destruction

Peter is a man who has a learning disability (mental handicap). Sometimes Peter destroys his own belongings, the belongings of other people or things at his home or day centre. He will slam doors hard enough to brake them, kick holes in doors and walls and throw things like TVs and radios onto the ground.

Vignette 3

Self Injury

Peter is a man who has a learning disability (mental handicap). Sometimes Peter will physically injure himself. He will punch and slap himself in the face, scratch his face, hands and arms so they bleed or bang his head on hard objects such as tables, doors and walls.

Appendix 4

The Challenging Behaviour Attributions Scale

Please consider how likely it is that the following statements are reasons for the person in the scenario behaving in the way just described. You have been given very little information compared to what you might have if you worked with the person. Therefore, simply think about the most likely reasons for someone like this to behave in this way.

Please give your response to each of the possible reasons and use the scales below each reason to indicate your opinion. Please indicate your response by drawing a circle around the appropriate point on the scale. The key shows what the points on the scale mean:

VUL=very unlikely, UL=unlikely, E=equally likely/unlikely, L=likely,
VL=very likely

1. Because she/he is given things to do that are too difficult for him/her.

VUL UL E L VL

2. Because she/he is physically ill.

VUL UL E L VL

3. Because he/she does not like bright lights.

VUL UL E L VL

4. Because he/she is tired

VUL UL E L VL

5. Because he/she can not cope with high levels of stress.

VUL UL E L VL

6. Because his/her house is too crowded with people.

VUL UL E L VL

7. Because he/she is bored.

VUL UL E L VL

8. Because of the medication that he/she is given.

VUL UL E L VL

9. Because he/she is unhappy.

VUL UL E L VL

10. Because he/she has not got something that he/she wanted.

VUL UL E L VL

11. Because he/she lives in unpleasant surroundings.

VUL UL E L VL

12. Because he/she enjoys it.

VUL UL E L VL

13. Because he/she is in a bad mood.

VUL UL E L VL

14. Because high humidity makes him/her uncomfortable.

VUL UL E L VL

15. Because he/she is worried about something.

VUL UL E L VL

16. Because of some biological process in his/her body.

VUL UL E L VL

17. Because his/her surroundings are too warm/cold

VUL UL E L VL

18. Because he/she wants something.

VUL UL E L VL

19. Because he/she is angry.

VUL UL E L VL

20. Because there is nothing else for him/her to do.

VUL UL E L VL

21. Because he/she lives in a noisy place.

VUL UL E L VL

22. Because he/she feels let down by somebody.

VUL UL E L VL

23. Because he/she is physically disabled.

VUL UL E L VL

24. Because there is not very much space in his/her house to move around in.

VUL UL E L VL

25. Because he/she gets left on his/her own.

VUL UL E L VL

26. Because he/she is hungry/thirsty.

VUL UL E L VL

27. Because he/she is frightened.

VUL UL E L VL

28. Because somebody he/she dislikes is nearby.

VUL UL E L VL

29. Because people do not talk to him/her very much.

VUL UL E L VL

30. Because he/she wants to avoid uninteresting tasks.

VUL UL E L VL

31. Because he/she does not go outdoors very much.

VUL UL E L VL

32. Because he/she is rarely given activities to do.

VUL UL E L VL

33. Because he/she wants attention from other people.

VUL UL E L VL

Appendix 5

Emotional Reaction to Challenging

Behaviour scale

Below is a list of emotions that caregivers have said they experience when they have to work with adults who display challenging behaviour. I want to know how you felt in response to the challenging behaviour in the scenario. Please circle the response for each emotion that best describes how you were feeling whilst listening to the scenario.

	No, not At all	Yes, slightly	Yes, moderately	Yes, very much
SHOKED	0	1	2	3
CONFIDENT	0	1	2	3
GUILTY	0	1	2	3
HOPELESS	0	1	2	3
COMFORTABLE	0	1	2	3
AFRAID	0	1	2	3
ANGRY	0	1	2	3

INVIGORATED	0	1	2	3
-------------	---	---	---	---

INCOMPETENT	0	1	2	3
-------------	---	---	---	---

HAPPY	0	1	2	3
-------	---	---	---	---

FRUSTRATED	0	1	2	3
------------	---	---	---	---

HELPLESS	0	1	2	3
----------	---	---	---	---

SELF ASSURED	0	1	2	3
--------------	---	---	---	---

DISGUSTED	0	1	2	3
-----------	---	---	---	---

RELAXED	0	1	2	3
---------	---	---	---	---

RESIGNED	0	1	2	3
----------	---	---	---	---

FRIGHTENED	0	1	2	3
------------	---	---	---	---

CHEERFUL	0	1	2	3
----------	---	---	---	---

HUMILIATED	0	1	2	3
------------	---	---	---	---

BETRAYED	0	1	2	3
----------	---	---	---	---

SAD	0	1	2	3
EXCITED	0	1	2	3
NERVOUS	0	1	2	3

Appendix 6

Challenging Behaviours Self Efficacy Scale

1. How confident would you be in dealing with the challenging behaviour of the person described in the scenario?

Not at all
confident

Very
confident

1 2 3 4 5 6 7

2. How difficult would you personally find it to deal with the challenging behaviour of the person described in the scenario?

Very difficult

Not at all
difficult

1 2 3 4 5 6 7

3. To what extent do you feel that the way you might deal with the challenging behaviour of the person in the scenario would have a positive effect?

Has no positive
effect at all

Has a very
positive effect

1 2 3 4 5 6 7

4. How satisfied are you with the way you would deal with the challenging behaviour described in the scenario?

Not satisfied

Very satisfied

at all

1 2 3 4 5 6 7

5. To what extent would you feel in control of the challenging behaviour described in the scenario?

Not in control

Very much

at all

in control

1 2 3 4 5 6 7

Appendix 7

Rating of Responsibility for the Challenging Behaviour

How responsible do you think the person is for the development of this behaviour?

They are							They are
not							totally
responsible							
	responsible						
at all							
1	2	3	4	5	6	7	

How responsible do you think the person is for changing this behaviour?

They are							They are
not							totally
responsible							
	responsible						
at all							
1	2	3	4	5	6	7	

Appendix 8

Rating of Likelihood of Offering Help

How much extra effort would you be willing to make to help this person?

No extra
effort
at all

As much
extra
effort as
possible

1

2

3

4

5

6

7

Appendix 9

Vignette 1

Physical Aggression

A person with a learning disability is sometimes aggressive towards his/her carers and the people he/she lives with. He/she will punch, kick and scratch people. He/she will also pull their hair and sometimes push them hard enough that they will fall to the ground.

Vignette 2

Property Destruction

A person with a learning disability sometimes destroys his/her own belongings, the belongings of other people or things at his/her home or day centre. He/she will slam doors hard enough to brake them, kick holes in doors and walls and throw things like TVs and radios onto the ground.

Vignette 3

Self Injury

A person with a learning disability sometimes physically injures him/herself. He/she will punch and slap him/herself in the face, scratch his/her face, hands and arms so they bleed or bang his/her head on hard objects such as tables, doors and walls.

Appendix 10

Attributional dimensions derived from the Challenging Behaviours Attributions
scale

Item	Internal/External	Stable/Unstable	Controlable/Uncontrolable
1	E	S	U
2	I	U	U
3	E	S	C
4	I	U	C
5	I	U	U
6	E	S	C
7	I	U	C
8	E	S	U
9	I	U	C
10	I	U	U
11	E	S	U
12	I	S	U
13	I	U	C
14	E	U	U
15	I	U	C
16	I	S	U
17	E	U	U
18	I	U	C
19	I	U	C

20	E	U	U
21	E	S	U
22	I	U	C
23	E	S	U
24	E	S	U
25	E	S	U
26	I	U	U
27	I	U	U
28	E	U	U
29	E	U	U
30	I	U	C
31	E	U	U
32	E	S	U
33	I	S	C

Appendix 11

Tests of Normality

Kolmogorov-Smirnov (a)

	Statistic	Df	Sig.
All scenarios ercb negative emotion total	.072	88	.200*
All scenarios ercb positive emotion total	.120	88	.003
All scenarios responsibility for development total	.105	88	.017
All scenarios responsibility for change total	.117	88	.005
All scenarios help total	.205	88	.000
All scenarios self efficacy total	.074	88	.200*
All scenarios internal dimension	.082	88	.200*
All scenarios external dimension	.064	88	.200*
All scenarios controllable dimension	.109	88	.011
All scenarios uncontrollable dimension	.081	88	.200*
All scenarios stable dimension	.070	88	.200*
All scenarios unstable dimension	.070	88	.200*

*. This is a lower bound of the true significance.

(a) Lilliefors Significance Correction

Appendix 12

Correlations

			all scenarios ercb negative emotion total	all scenarios ercb positive emotion total	all scenarios responsibility for development total	all scenarios responsibility for change total	all scenarios help total	all scenarios self efficacy total	all scenarios internal dimension	all scenarios external dimension	all scenarios controlable dimension	all scenarios uncontrolable dimension	all scenarios stable dimension	all scenarios unstable dimension
Spearman's rho	all scenarios ercb negative emotion total	Correlation Coefficient	1.000	-.283(**)	.228(*)	-.005	-.041	-.200(*)	.009	.002	-.002	.022	-.023	.016
		Sig. (1-tailed)	.	.004	.016	.481	.352	.031	.467	.494	.492	.420	.417	.443
		N	88	88	88	88	88	88	88	88	88	88	88	88
	all scenarios ercb positive emotion total	Correlation Coefficient	-.283(**)	1.000	.026	.020	-.061	.281(**)	-.015	.054	.005	.021	.007	-.010
		Sig. (1-tailed)	.004	.	.404	.425	.288	.004	.445	.310	.483	.423	.473	.465
		N	88	88	88	88	88	88	88	88	88	88	88	88
	all scenarios responsibility for development total	Correlation Coefficient	.228(*)	.026	1.000	.584(**)	-.216(*)	-.048	-.038	-.083	-.061	-.072	-.038	-.057
		Sig. (1-tailed)	.016	.404	.	.000	.021	.330	.363	.221	.287	.254	.363	.298
		N	88	88	88	88	88	88	88	88	88	88	88	88
	all scenarios responsibility for change total	Correlation Coefficient	-.005	.020	.584(**)	1.000	-.138	.010	.015	.000	-.013	.021	.066	.009
		Sig. (1-tailed)	.481	.425	.000	.	.100	.462	.446	.499	.451	.422	.270	.465
		N	88	88	88	88	88	88	88	88	88	88	88	88
	all scenarios help total	Correlation Coefficient	-.041	-.061	-.216(*)	-.138	1.000	.231(*)	.027	-.120	.011	-.072	-.073	-.037
		Sig. (1-tailed)	.352	.288	.021	.100	.	.015	.400	.132	.459	.251	.249	.366
		N	88	88	88	88	88	88	88	88	88	88	88	88
	all scenarios self efficacy total	Correlation Coefficient	-.200(*)	.281(**)	-.048	.010	.231(*)	1.000	.169	.163	.142	.201(*)	.134	.183(*)
		Sig. (1-tailed)	.031	.004	.330	.462	.015	.	.057	.065	.094	.030	.106	.044
		N	88	88	88	88	88	88	88	88	88	88	88	88
	all scenarios internal dimension	Correlation Coefficient	.009	-.015	-.038	.015	.027	.169	1.000	.773(**)	.949(**)	.871(**)	.748(**)	.957(**)
		Sig. (1-tailed)	.467	.445	.363	.446	.400	.057	.	.000	.000	.000	.000	.000
		N	88	88	88	88	88	88	88	88	88	88	88	88
	all scenarios external dimension	Correlation Coefficient	.002	.054	-.083	.000	-.120	.163	.773(**)	1.000	.780(**)	.955(**)	.900(**)	.858(**)
		Sig. (1-tailed)	.494	.310	.221	.499	.132	.065	.000	.	.000	.000	.000	.000
		N	88	88	88	88	88	88	88	88	88	88	88	88
	all scenarios controlable dimension	Correlation Coefficient	-.002	.005	-.061	-.013	.011	.142	.949(**)	.780(**)	1.000	.814(**)	.728(**)	.942(**)
		Sig. (1-tailed)	.492	.483	.287	.451	.459	.094	.000	.000	.	.000	.000	.000
		N	88	88	88	88	88	88	88	88	88	88	88	88
	all scenarios uncontrolable dimension	Correlation Coefficient	.022	.021	-.072	.021	-.072	.201(*)	.871(**)	.955(**)	.814(**)	1.000	.896(**)	.916(**)
		Sig. (1-tailed)	.420	.423	.254	.422	.251	.030	.000	.000	.000	.	.000	.000
		N	88	88	88	88	88	88	88	88	88	88	88	88
	all scenarios stable dimension	Correlation Coefficient	-.023	.007	-.038	.066	-.073	.134	.748(**)	.900(**)	.728(**)	.896(**)	1.000	.757(**)
		Sig. (1-tailed)	.417	.473	.363	.270	.249	.106	.000	.000	.000	.000	.	.000
		N	88	88	88	88	88	88	88	88	88	88	88	88
	all scenarios unstable dimension	Correlation Coefficient	.016	-.010	-.057	.009	-.037	.183(*)	.957(**)	.858(**)	.942(**)	.916(**)	.757(**)	1.000
		Sig. (1-tailed)	.443	.465	.298	.465	.366	.044	.000	.000	.000	.000	.000	.
		N	88	88	88	88	88	88	88	88	88	88	88	88

** Correlation is significant at the 0.01 level (1-tailed).

* Correlation is significant at the 0.05 level (1-tailed).